

English River Forest
Independent Forest Audit
April 1, 2000 – March 31, 2005

Final Report



ArborVitae Environmental Services Ltd.

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1 EXECUTIVE SUMMARY

ArborVitae Environmental Services Ltd. performed an independent forest audit of the management of the English River Forest, the former English River Forest¹ and the Brightsand Forest covering the period April 1, 2000 to March 31, 2005. The Brightsand Forest and the former English River Forest were recently amalgamated. The Forest units were amalgamated on April 1, 2004, and the licence for the English River Forest was revised to encompass the area formerly covered by the Brightsand Forest, effective May 24, 2005. Therefore, for the first four years of the period covered by this audit (i.e. April 1, 2000 to March 31, 2004) the Brightsand Forest and the former English River Forest were managed as separate Forests. For the final year of the audit period, the Forests were managed together as the English River Forest.

The audit was undertaken using the Independent Forest Audit Process and Protocol (IFAPP), prepared by the Ministry of Natural Resources (MNR or the Ministry). The independent forest audit (IFA) examined compliance with the *Crown Forest Sustainability Act*, the terms of relevant licences, especially Sustainable Forest Licences 542453 (Brightsand Forest) and 542454 (former English River Forest and current English River Forest), and the management plans in place for the forest areas. The IFA assessed the performance of both Bowater and the Ministry, including examinations of the development of the plans and related documents, the effectiveness of management practices and the sustainability of forest management.

The audit has concluded that there were a number of positive features of management during the audit period, including most aspects of the field operations, silvicultural monitoring, training, and working with other forest users, including commitment holders. There are some recommendations and suggestions directed at these aspects of performance in order to further improve them, but the overall impression of these aspects is positive.

However, the audit has concluded that there were major deficiencies in the development of the 2004 FMP and the associated Contingency FMP. In addition, the audit team encountered poor performance in the development of Annual Work Schedules and Annual Reports.

The audit found that the processes of developing and approving the 2004 FMP and 2004 Contingency plan were fraught with difficulties. These difficulties led to the development of a strained working relationship between the Company and MNR, and eventually to the failure of the planning team to function as identified in the FMP's Terms of Reference. Major deficiencies of the planning process included:

- Use of incorrect rationale for the development of the contingency plan;
- The submission of a contingency plan whose operations bore little resemblance to those which were intended to be carried out;
- Deficiencies in the AWS submissions (e.g. incomplete submissions, alterations not addressed in a timely manner);
- Deficiencies in Annual Report submissions (e.g. incorrect tables, failure to

¹ Throughout this report the "former" English River Forest is referred to when we are discussing the Forest prior to its amalgamation with the Brightsand Forest. When we refer to the English River Forest (with no "former" in front), it means the Forest after amalgamation.

address MNR comments, poor textual descriptions, etc);

- The devolution of decision making regarding key issues in the plan to the Steering Committee, thereby subsuming the role of the planning team; and
- The approval of the 2004 FMP by MNR managers in spite of explicit concerns by MNR members of the planning team regarding the quality of the modelling employed and the sustainability of the plan.

Other issues related to planning are identified throughout this report. As a result of the deficiencies in planning, this audit finds that one of the key conditions of the SFL, which is related to planning obligations, was not met.

The other key finding of this audit is that management of the forest, as set out in the 2004 FMP, is not on a sustainable path.

The Audit Team finds that the evidence provided by actual harvest yields during the audit period indicates that the yield curves for the current forest, and likely for the second growth stands, forecast yields that are approximately 20% higher than the amount of timber that is present.

Equally important in the audit team's assessment of sustainability was the unavailability of substantial area that had been allocated for harvest in the former English River Forest. This became evident in the fourth year of the 2000 English River FMP, when so many of the remaining allocated stands were not economical to harvest. These areas were considered to be available during the preparation of the 2000 English River FMP but were in fact too costly to harvest – in other words, the SFMM analysis has overestimated the amount of area that is economically available for harvesting. The same issue was also reported in the 2000 IFA for the former English River Forest, which reviewed the 1995-2000 period. The audit team believes that it is very likely that the same situation will arise during the term of the current plan.

The implications of these errors go beyond lower-than-planned volumes in the current period, since the entire wood supply has been overestimated. The Company's target conifer harvest for the forest, which is 925,000 m³/year, likely exceeds the long-term harvest by between 125,000 and 225,000 m³/year, under the Company's desired management intensity. The current FMP does not leave the required amount of marten core habitat in all plan periods, and arguably in the current forest. Old growth representation on the forest is planned to be minimal. The Company does not have the flexibility on this forest to increase harvest area to obtain the target volume, and this suggests that there will be economic and social costs associated with bringing the harvest on this forest to a sustainable level. The planned harvest volume during the first three five-year periods, as indicated in the current FMP, exceeds the harvest target, and the Company has increased the present harvest at the expense of the future harvest level. As a result, there is no buffer of volume to support the planned future harvests in the event of a yield shortfall, or a large natural disturbance. Accordingly, the future harvest is likely to be considerably lower than forecast.

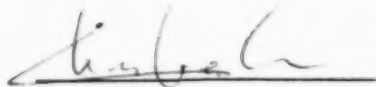
It is the conclusion of this audit that the 2004 Forest Management Plan does not provide for sustainable management of the English River Forest, and that the planning and reporting requirements of the SFL were not met by the Company. For these reasons the audit team recommends that the licence for the English River Forest should not be extended.

Both the MNR and Company have recognized that the planning process, as it was implemented in the development of the 2004 FMP was unsatisfactory from a number of perspectives. During the summer of 2005 senior staff from the Company and MNR, working with their staffs, developed detailed plans for addressing the problems with the last planning process. The Company has re-organized to create a planning structure which it believes will help avoid some of the issues which arose, and the MNR has identified important measures to improve its performance too. As these measures were identified after the audit period, and as the parties have only recently begun to implement them, and so their success is unknown, they are not taken into account in this audit's key findings. However, given the sincere intent of the Company to improve, and the attempts of the Company and MNR to develop a more collaborative relationship, there is obviously cause for optimism that the development of the next plan will be a much more satisfying experience than was the development of the 2004 plan.

In addition, the Company has indicated that it recognizes that the yields in the 2004 FMP are overestimated, and that it intends to address this issue expeditiously. However, as the measures are not yet identified, or obviously implemented, the findings of this audit regarding sustainability cannot incorporate the Company's intentions.

Given the fact that this audit has identified some serious deficiencies in the management of the forest, and that the Company and MNR are making sincere attempts to address the issues, the audit team believes the next audit of the forest should occur sooner than the regular five-year interval to provide assurance to the Crown and the people of Ontario that the management of the forest has improved and is on a sustainable course.

Therefore, this audit recommends that the next Independent Forest Audit should occur in 2008. At that time, the development of the 2009 FMP will be well underway, the draft plan should have been submitted and there should be sufficient evidence to assess the success of the planning process and the sustainability of the draft plan, so there will be ample opportunity to see how this audit's key concerns have been addressed.



Chris Wedeles, Lead Auditor

2 INTRODUCTION

This document presents the results of the Independent Forest Audit (IFA) of the English River Forest Management Unit, covering activities during the period April 1, 2000 to March 31, 2005. The audit was undertaken by a team of natural resource management professionals following the direction of the Ontario Ministry of Natural Resources' (MNR) Independent Forest Audit Process and Protocol² (IFAPP).

The recent licensing of the English River Forest is somewhat complex. The Forest consists of what were, until recently, two different Forest Management Units – the Brightsand Forest and the former English River Forest (both licensed to Bowater). The two forests abutted each other for a substantial portion of their boundaries. A proposal by Bowater for amalgamation of the forests was accepted by the Ministry of Natural Resources and the present English River Forest came into existence in 2004. The most recent management plan for the Brightsand Forest covered the period 1999-2004, and with the expiry of that plan, management of the two forests became integrated as the English River Forest. In place at that time was a 2000-2005 FMP for the former English River Forest. That plan was terminated a year early partly to facilitate development of a 2004-2024 FMP for the present English River Forest.

When it became apparent that the preparation of 2004-2024 FMP would not meet the deadline required to provide for uninterrupted management of the Forest, a decision was made to prepare a Contingency Forest Management Plan (CFMP). The English River Forest was managed for almost one year under the Contingency Plan prior to the FMP coming into effect. The term of the FMP remained 2004-2024 even though it was not approved until February of 2005. This audit examined various aspects of plan preparation and content, and management operations implemented under the four plans in effect over the term April 1, 2000 to March 31, 2005 as outlined below:

- 1999-2004 Brightsand FMP:
 - plan preparation was not included in the scope of this audit as it was covered in the 2000 IFA of the Brightsand Forest;
 - although plan content was included in the 2000 IFA, it was referred to as context for this audit; and
 - implementation of management operations for the last four years of this FMP (April 1, 2000 to March 31 2004).
- 2000- 2005 FMP for the former English River:
 - plan preparation was not included in this audit as it was covered in the 2000 IFA of the former English River Forest;
 - plan content; and
 - implementation of management operations for the four years in which this plan was in effect (April 1, 2000 to March 31 2004).
- 2004-2005 English River CFMP:
 - plan preparation;
 - plan content; and
 - implementation of management operations for the one year in which the plan was in effect.

² Ontario Ministry of Natural Resources. 2005. Independent Forest Audit Process and Protocol. Queen's Printer for Ontario.

- 2004-2024 English River FMP:
 - plan preparation;
 - plan content; and
 - implementation of management operations for the one year (2004-2005) which this plan overlapped with the 2004-2005 CFMP.

Of the four plans in effect during portions of the audit period, the most relevant is the 2004-2024 FMP as it is the one presently guiding operational and strategic management of the Forest. Therefore, in the audit, emphasis was placed on assessing the strategic components of that plan, compared to the three other plans.

The audit also reviews and assesses the activities of the Ontario Ministry of Natural Resources (MNR) related to management of the English River Forest. The MNR is the provincial Ministry with the primary responsibility for managing the province's Crown forests and, as such, it oversees and regulates planning and operations on the English River Forest. The MNR also has management responsibility for wildlife. Within the MNR, the Ignace Area office of the Dryden District was the lead in overseeing administration and regulatory aspects of management.

Bowater is responsible for leading the management planning for the Forest, although as for all Sustainable Forest Licences, the MNR plays an integral role and must approve the Forest Management Plans (FMPs), Annual Work Schedules (AWSs) etc. Bowater is also responsible for implementing silvicultural activities. Harvesting operations are conducted primarily by Bowater and by Buchanan Forest Products Ltd. (hereafter referred to as Buchanan) through an overlapping resource licence.

The Crown Forest Sustainability Act (CFSA) empowers the Minister of Natural Resources to manage Crown forests in Ontario and also provides the legislative basis for the Independent Forest Audits. The CFSA (section 26) specifies that a review (the main component of which is an IFA) must be conducted every five years, and that if the review satisfies the Minister that the licensee has complied with the terms and conditions of the licence, the Minister shall extend the term of the licence for five years. The scope and process of an IFA is set out in the Independent Forest Audit Process and Protocol³ (IFAPP) and in Ontario Regulation 160/04. The IFAPP, which is reviewed and updated annually, contains more than 350 individual audit procedures. Of these, roughly 250 apply to this IFA.

The results of each audit procedure are not reported separately in this report. Rather, they have provided the basis for the information in the following sections (primarily Section 3). In the following sections, noteworthy aspects of the management of the forest are discussed. These discussions are followed in some instances by recommendations or suggestions. The IFAPP gives explicit definitions of these terms:

Recommendation - "sets out a high level directional approach to addressing a non-conformance. In most cases, recommendations follow from the observation of material non-conformances. In some instances, however, auditors may develop recommendations to address situations where they perceive a critical lack of effectiveness in forest management activities, even though no non-conformance with law

³ Ontario Ministry of Natural Resources. 2005. Independent Forest Audit Process and Protocol. Queen's Printer for Ontario.

or policy has been observed."

Suggestion - "value-added advice which reinforces adaptive resource management and contributes to continuous improvement."

Of these two types of findings, recommendations are the more serious. Both recommendations and suggestions can be directed towards the Company and/or the Ministry of Natural Resources.

The Audit Team found situations which should be corrected by the tenure holder acting in concert with district or regional MNR offices. Other situations which we believe need corrective action, however, are more appropriately addressed by the corporate sections of MNR. These situations involve issues related to the general framework of forest management in Ontario, and although they have been manifested locally (hence, they surfaced in this audit), their resolution lies not in the field offices of MNR, but in the Main Office, Forest Management Branch, or other corporate parts of MNR. Issues which we believe should be addressed by the field units of MNR (i.e. Area or District) are addressed in recommendations or suggestions which simply identify "MNR". Recommendations or suggestions which we believe should be addressed by central branches or sections of MNR identify "corporate MNR" as having primary responsibility.

The team which conducted this audit consisted of five individuals, all experienced forest auditors, and all specialists in forest management. Appendix B provides details of their qualifications, roles and responsibilities.

Forest management in Ontario (and elsewhere) uses a variety of technical terms. We have tried to explain terms as they are used in this document, but readers unfamiliar with the forest management planning process in Ontario are referred to the document "A Guide to Forest Management Planning"⁴ (available from the Ministry of Natural Resources) for further explanations. Appendix D lists the acronyms used in this report.

2.1 AUDIT PROCESS

2.1.1 Purpose and overview of the process

The CFSA directs the Minister of Natural Resources to conduct a review of each tenure-holder every five years to ensure that the licensee has complied with the terms and conditions of its licence. The Independent Forest Audit fulfils this mandate, as well as complying with the direction to the Ministry laid out in Terms and Conditions #86 and 87 and Appendix 25 of the 1994 Class EA decision⁵ to "*undertake operational audits, through the appointment of suitably qualified independent audit teams, which will include an assessment of compliance with the timber management planning process, approved Timber Management Plans, implementation manuals, and provincial policies,*

⁴ Ontario Ministry of Natural Resources. 1997. A Guide to Forest Management Planning. Ontario Ministry of Natural Resources Forest Information Series. 16 p.

⁵ Koven, A. and E. Martel. 1994. Reasons for Decision and Decision - Class Environmental Assessment by the Ministry of Natural Resources for Timber Management on Crown Lands in Ontario. Ontario Environmental Assessment Board.

procedures, and legislation". The Declaration Order⁶ confirmed the importance of the IFAs and imposed some additional conditions on MNR; direction regarding the conduct of the audits is provided in Ontario Regulation 160/04 under the CFSA.

The IFAPP document states that the purpose of the audits is:

- *"assess to what extent forest management planning activities comply with the Forest Management Planning Manual and the [Crown Forest Sustainability] Act;*
- *assess to what extent forest management planning activities comply with the Act and with the forest management plans, with the manuals approved under the Act, and the applicable guides;*
- *assess the effectiveness of forest management activities in meeting the forest management objectives set out in the forest management plan, as measured in relation to the criteria established for the audit;*
- *compare the forest management activities carried out with those that were planned;*
- *assess the effectiveness of any action plans implemented to remedy shortcomings revealed by a previous audit; and*
- *review and assess a licensee's compliance with the terms and conditions of the forest resources licence."*

2.1.2 Process

The IFAPP describes each of the components of the audit process and contains the audit protocol, which constitutes the main framework for the audit. There are eight principles within the audit protocol (reproduced in Appendix C). Each principle contains a series of criteria, which, if met, will result in the principle being achieved. For each criterion, a number of procedures are used to assess the auditees' compliance and effectiveness. As noted above, there are approximately 250 individual procedures that are applicable to this audit of the English River Forest.

The audit commenced with the preparation of a detailed audit plan⁷, which described the procedures to be used during the audit and assigned responsibilities to members of the Audit Team. A pre-audit meeting was held between representatives of the Audit Team, Bowater Inc., the Ministry of Natural Resources and the Local Citizens' Committee (LCC). The primary purposes of the meeting were to familiarize the auditees with the audit process, review the Audit Plan, and to select the sites to be inspected in the field during the audit.

The focus of the audit was an intensive six-day visit, which included the following:

- Review of relevant files at the offices of the Company in Ignace and Thunder Bay, and at the Offices of the Ministry of Natural Resources in Ignace and Dryden;
- Interviews with Bowater Inc. staff, commitment holders and overlapping licensees, MNR personnel, First Nations individuals, and members of the LCC; and
- Field inspection of many representative sites where forest management

⁶ Declaration Order regarding MNR's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario, approved by Order in Council 1389/03 on June 25, 2003.

⁷ ArborVitae Environmental Services Ltd. English River Forest Independent Forest Audit Plan, June 21, 2004.

activities were , undertaken during the term covered by the audit, examining:

- Results of harvesting and silvicultural operations in a range of forest types on different site types;
- Results of practices intended to safeguard wildlife, aquatic, and tourism values; and
- Results of road construction, maintenance and abandonment practices.

Table 1 shows the sample size and sampling intensity for key operations. The IFAPP requires that audits sample between 10 and 20% of the area treated during the audit period for harvesting, site preparation and other key activities. The audit was within, or exceeded this desired sample size for all activities. In Table 1, the sample intensity refers to the proportion of the total activity undertaken from April 1, 2000 to March 31, 2005 which was sampled during the audit.

Table 1. Sampling Intensity of the Audit.

Feature	Total in Audit Period ^a	Total Sampled	Sample Intensity %
Harvest (ha)	27,106	3,087	11.4
Site Preparation (ha)	15,082	3,056	20.3
Natural Regeneration (ha)	5,158	763	14.8
Artificial Regeneration (ha)	21,332	3,872	18.2
Tending (ha)	16,919	3,032	17.9
Free-to-Grow Surveys (ha)	48,901	5,640	11.5
2003 FRT Areas (ha) ^b	25,856	5,943	23.0
Areas of Concern (no.)	Approx. 650	Approx. 100	Approx. 15.4
Roads (Km) (all classes) ^c	Approx. 600	Approx. 200	Approx. 33.3
Bridges and Culverts (no) ^d	Approx. 35	Approx. 10	Approx. 28.5

^a - Data for the year 2004/05 were not available; estimates were used in calculating the total for all activities except harvesting.

^b - Indicates the area of sites reviewed as part of a financial "specified procedures" review for all Forest Renewal Trust areas in 2003. Includes 14,777 ha surveyed for free-to-grow status.

^c - In total the audit team drove on over 500 km of access roads (including roads constructed during the audit term, and previously-constructed roads) during the site visits.

^d - Additional previously-installed culverts and cross-drainage culverts were inspected on an ad-hoc basis during the site visits.

Table 1 is intended to portray an approximate level of effort only. There are several factors which preclude too-precise an interpretation of the figures presented in the table. Although roughly 65 stops were made during the field inspection portion of the audit, more than one aspect of forest management was inspected at most stops. For example, at stops where harvesting had taken place, harvesting practices, compliance issues, road construction, Area of Concern (AOC) protection, site preparation, and regeneration activities may all have been inspected. Finally, although areas are shown in Table 1, it should be noted that we did not inspect every hectare of the blocks we visited – such a level of effort would be infeasible.

Examples of operations were examined in each major forest unit present on the Forest. In addition to inspecting sites where harvesting had been conducted, a number of sites on which renewal activities had taken place were visited to evaluate the appropriateness and quality of these treatments and to perform an initial evaluation of their effectiveness.

These included sites that were site prepared, planted, seeded and those for which natural regeneration was reported.

2.2 FOREST MANAGEMENT CONTEXT

2.2.1 Location of Forest Management Unit

The English River Forest is located in north-western Ontario (Figure 1), approximately 200 km northwest of Thunder Bay. The main highway access to the forest is provided by the Trans-Canada Highway. The community of Ignace is in the southern portion of the Forest, and the community of Dryden is approximately 40 km to the west of the Forest. The Forest is bordered primarily by other Sustainable Forest Licence areas, although Wabakimi Provincial Park forms its northeastern boundary.

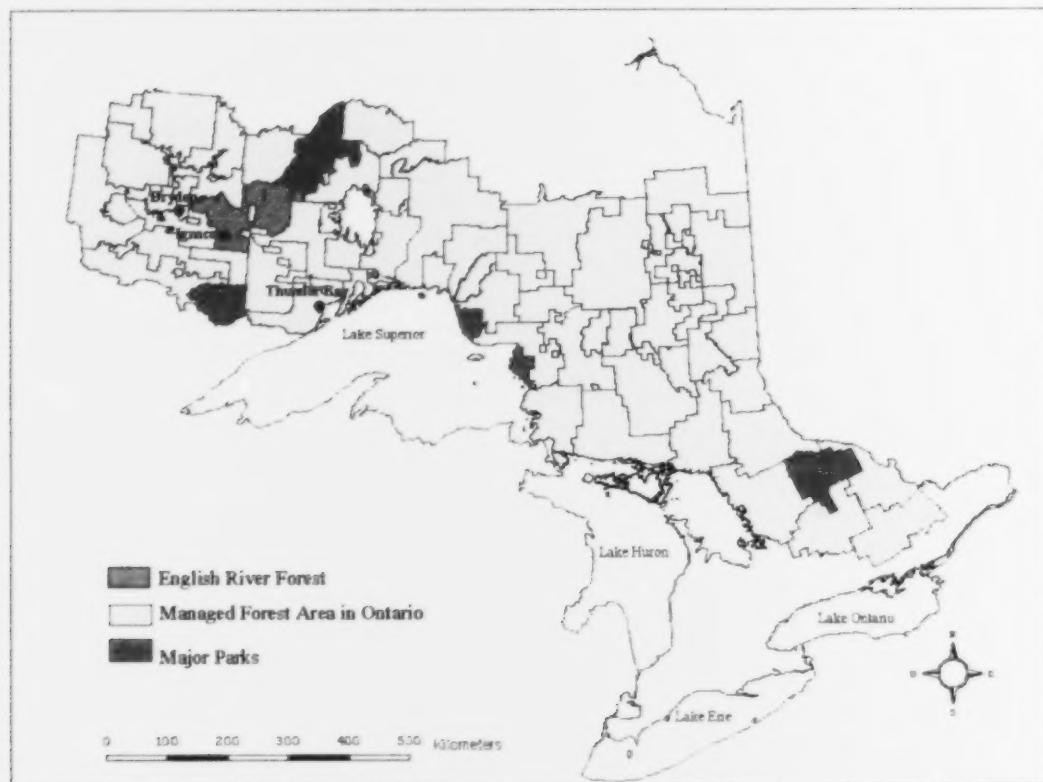


Figure 1. Location of the English River Forest. The line separating the two portions of the English River Forest is the boundary between the former English River Forest (to the west) and the former Brightsand Forest (to the east).

2.2.2 Brief Description of the English River Forest

This section presents an overview of key characteristics of the English River Forest – more detailed description can be found in the forest management plans included in the review. The primary source of information for this description is the 2004 FMP.

According to table FMP-1 of the 2004 FMP, the English River Forest encompasses 1,193,420 ha, of which approximately 95% is Crown land. During the audit period, most of the remaining 5% was land privately owned by Abitibi Consolidated. Of the Crown land area, approximately 91% is classified as Crown Managed land, approximately 5% is in Parks and, and the remainder is classified as unmanaged Crown land (Crown lands other than parks on which timber management is not permitted).

Table 2 shows the area of managed Crown land in various land classes as indicated in the 2004 FMP. Of the Forest's Crown land area, approximately 76% is classified as production forest (land capable of supporting forest management).

Table 2. Managed Crown Land Area of English River Forest by Land Class (ha).
(Source: 2004 English River forest FMP, Table FMP-1)

Land Class	Area (ha)	Percentage ^a
Water	171,757	16.6
Non-forested and unsurveyed land	9,725	0.9
Non-Productive Forest ^b	55,884	5.4
Protection Forest ^c	14,492	1.4
Production Forest ^d	780,913	75.6
Total Forested Area	851,289	82.4
Total Managed Crown Land Area	1,032,771	100

^a - Percent of total managed Crown land area

^b - Non-productive forest includes areas incapable of growing commercial tree, such as muskeg, rock, brush, etc.

^c - Protection forest includes forests on sensitive soils and islands.

^d - Production forest is land capable of supporting forest management.

Table 3 shows the area of managed Crown forest that is available for commercial forestry operations, by working group (the most prominent species in a stand) according to the 2004 FMP.

Table 3. Area of Crown Managed Forest (ha). (Source 2004 FMP, Table FMP-2)

Forest Unit	Crown Managed Forest	Percentage ^a
Ash	18	> 0.1
Balsam Fir	2,600	0.3
White Birch	29,142	3.7
Cedar	7,961	1.0
Larch	1,221	0.2
Soft Maple	34	> 0.1
Jack Pine	300,684	38.5
Poplar	78,537	10.1
Red Pine	997	0.1
White Pine	500	> 0.1
Black Spruce	358,265	45.9
White Spruce	953	0.1
TOTAL	780,912	100

^a - Percent of available Crown managed forest

Figure 2 shows the age class distribution of the Crown managed productive forest on the Unit. It is apparent from Table 3 and Figure 2 that the forest is dominated by a small number of working groups. The predominant working group is black spruce, which comprises almost 46% of the Crown managed forest; next is jack pine which comprises 38.5%, and poplar (trembling aspen), which comprises 10%. All other working groups together make up less than 6% of the Forest. The age class distribution shown by Figure 2 reveals a dissimilarity between the distributions of stands dominated by jack pine and those dominated by black spruce. Across the Forest, black spruce stands have an older profile, being composed primarily of trees between 60 and 120 years. Conversely, in the jack pine stands, young trees less than forty years old are most prominent. This is likely because historic harvesting and renewal efforts have focused on jack pine and because large areas of jack pine have been forest affected by wildfire.

Jack pine stands dominate on the upland sand flats in the central portion of the Forest. On clay sites in the south-eastern part of the Forest, mixed wood stands of aspen, balsam fir, white birch, spruce and pine are common. On low-lying sites throughout the Forest, black spruce stands dominate. Some areas support typical bog vegetation such as sphagnum moss, Labrador tea, grasses and sedges. Other fresh sites support pockets of cedar. Well-drained sites with coarse soils, such as moraines (which traverse the Forest), generally support jack pine and occasional stands of white and red pine.

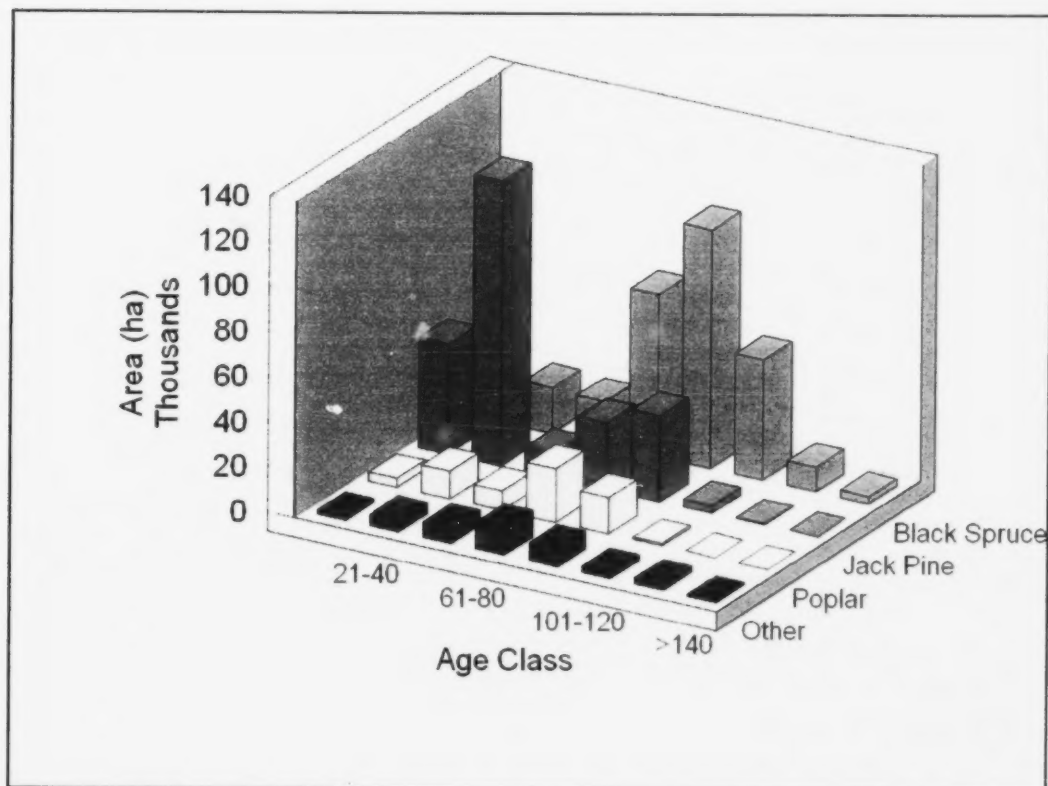


Figure 2. Age Class Distribution of Crown Managed Productive Forest by Forest Unit. (Source 2000 FMP, Table FMP-9) See Table 3 for full names of forest units.

Historically, fire, blowdown, and insect infestations have been the main agents of forest disturbance in the English River Forest area. The 2004 FMP notes that data from MNR and the Company's own disturbance tracking show that between 1921 and 2004, almost 275,000 ha in the forest had burned. Fires can occur in large patches over the forest, and do not occur regularly over time. In the decade 1971-1980 more than 145,000 ha burned, with more than half of the area affected in a single year. The 2004 FMP provides data that show that approximately 19,500 ha of blowdown occurred on the forest in the 1980's and 1990's, with more than 80% occurring in a single year. No data on insect infestation are provided in the FMP, however, it does note that spruce budworm is the dominant insect pest, and that it predominantly affects balsam fir.

Like all Ontario forests, the English River Forest supports a variety of wildlife species that depend on a mosaic of forest habitats. The woodland caribou is an important species on the forest for several reasons. Caribou are identified by The Committee on Endangered Species in Canada (COSEWIC) as a threatened species. Caribou are important for the Forest not just for their ecological significance, but also because of the species' influence on forest management. About one-third of the English River Forest is north of the "caribou line" – a boundary defined by the MNR, north of which forest management is implemented using the province's caribou guidelines.⁸ The guidelines prescribe managing the forest to provide a continuous supply of large blocks (i.e. 10,000 ha or greater) of mature coniferous forest, as well as conserving calving areas and movement corridors. Marten is a featured species on the forest south of the caribou line. There, forest management is implemented following the direction of the Marten Guide⁹. Marten is a featured species because of its dependence on old forests. A key aspect of the marten guide is the retention of core habitat areas primarily of old coniferous forest between 30 and 50 km² in size.

Moose is the prime game species in the Forest. Deer (in the southern portion of the forest) and black bear are also important game species. The Forest also provides habitat for many other wildlife species, including scores of species of songbirds, birds of prey, small mammals, insects, etc. In addition to woodland caribou, other species recognized by either COSEWIC or its Ontario counterpart the Committee on the Status of Species at Risk in Ontario (COSSARO) include bald eagle, wolverine, and great gray owl.

The English River Forest also provides regionally and locally important non-industrial commercial uses. Citing data from the 2000 FMP for the former English River Forest and the 1999 FMP from the Brightsand Forest, the 2004 FMP reported that there were 32 main base lodges and 11 outposts on the former English River, and 6 main base lodges and 46 outposts on the Brightsand Forest. In addition there were 40 and 28 traplines and 44 and 32 bear management areas on the former English River and Brightsand Forests respectively. The Forest also provides for many non-commercial recreational opportunities, including snowmobiling, boating, canoeing, berry picking, etc.

⁸ Racy, G., A. Harris, L. Gerrish, E. Armstrong, J. McNicol, and J. Baker. 1999. Forest management guidelines for the conservation of woodland caribou: A landscape approach. Ontario Ministry of Natural Resources, Thunder Bay, ON.

⁹ W.R. Watt, J.A. Baker, D.M. Hogg, J.G. McNicol, and B.J. Naylor. 1996. Forest management guidelines for the provision of marten habitat. Version 1.0 Ontario Ministry of Natural Resources. Queen's Printer for Ontario.

2.2.3 Relevant management issues

Several of the important management issues that arose during this audit which affect the English River Forest are briefly described in this section – these issues re-appear in various places throughout the report, indicating that they are important issues with complex direct and indirect impacts.

Preparation of the 2004 Forest Management Plan

The preparation of the 2004 FMP encountered many difficulties. Chief among these were the inability of the planning team to reach consensus (and therefore make decisions) on key aspects of managing the forest, significant delays in the preparation of key plan inputs and of the plan as a whole, and a high level of animosity and mistrust amongst the MNR and Company planning team members

Yield Curves

The yield curves used to plan future management of the forest over-estimate the yields which can be achieved at harvest. They are higher than those used for the Brightsand Forest, the former English River Forest and for two abutting forests which were examined as a basis for comparison. The presumed yields are significantly higher than those achieved in the recent management of the Brightsand and former English River Forests. Analyses undertaken for this audit indicate that the Company has overestimated the wood supply, leading to concerns regarding the sustainability of the Company's planned management of the forest.

Management for Caribou and Marten

As noted above, management of the forest is strongly influenced by the requirement to implement guidelines which provide habitat for woodland caribou and marten. Partly because the forest is highly fragmented, it was very challenging for the planning team to identify and agree upon the large blocks of forest which are key to implementing the guidelines. Although the guidelines require managing large blocks of contiguous habitat, their implementation affects virtually all aspects of managing the forest including the distribution of management activities, future wood supply, and access development.

Annual Reports and Work Schedules

The Company struggled to produce annual reports and work schedules of an acceptable quality, and generally, the quality of the annual reports and work schedules submitted to the MNR was not good. Issues with the annual reports included late submissions, very protracted periods of responding to MNR required alterations, missing text and tables and inadequate textual discussions. Issues with the annual work schedules included the submission of incomplete documents and the required alterations not being completed in a timely manner.

3 SUMMARY OF AUDIT FINDINGS

3.1 COMMITMENT

The Company has prepared two comprehensive policy statements, and posted them in prominent places throughout the Company offices. The first is a statement of policy that applies to all Canadian forestry operations of the Company. The second is written to apply to the Company's operation from Thunder Bay. The employees interviewed were aware of these policies and expressed general support for them.

As well, the Bowater Thunder Bay Woodlands Forestry Policy is distributed to all of Bowater's contractors. The policy is found in Contractor field garages, Contractor offices, Bowater Field Offices (East and West) and the Mill in Thunder Bay. A copy of the Forestry Policy is found in the EMS and SFI Employee Handbook of which all employees have a copy (both Bowater and Contractor).

Training on the Thunder Bay Forestry Policy takes place during EMS Awareness Training which all employees are required to have within 60 days of starting work. The Policy component of this training focuses on the three policy commitments, namely 1) Prevention of Pollution 2) Commitment to Compliance and 3) Continual Improvement. However, a portion of the EMS Awareness Training Module deals specifically with the fact that the policy is a top-down commitment that requires conformance throughout the organization - from senior management to all levels.

Changes to the Forestry Policy are communicated by interoffice memo and by quarterly update meetings for the entire woodlands.

The commitment principle in the IFAPP specifies the requirement to examine Company policies and vision and mission statements to determine if they reflect a commitment to sustainable forest management (SFM). Bowater's vision, as published in its forest policy statement includes these main themes: protect the environment, conserve resources, ensure sustainable development and seek continuous improvement in environmental performance. The Company has also adopted the Ontario Forest Industries Associations' Code of Forest Practices as guiding principles for all forest operations.

In general, Bowater's Forest Policy and other documents governing forest operations were found to be well structured and easily understandable. They adequately addressed the Company's vision of responsible forest management and fulfil the Commitment Principle outlined in the IFAPP. Bowater's policy commits the Company to: manage for sustainability, renew the forest, maintain the productivity of ecosystems, conserve biodiversity, protect the forest from insects, fire and disease, reduce pesticide use, train and involve employees, listen to the public, and share knowledge with others. In implementing this policy Bowater pledges to comply with all laws, regulations and Company policies and strives to continually improve its performance. The Company will also monitor and adapt its forest management practices and validate them against recognized standards through independent third-party certification.

All of these policies are posted in prominent places throughout the Company offices. In a normal working day all employees would pass by the policies several times, and have

many opportunities to read and reflect on what they mean. In interviews with employees, the audit team found a high awareness of the forest and environmental policies and a good understanding of what they mean.

The policy statements, however, do not have an expressed commitment to working with Aboriginal people to assist them in deriving benefits from the forest. Even though the Company does include Aboriginal people in its forest management, a commitment to Aboriginal people in the policy statements would provide some tangible evidence that the senior management level that the Company is interesting in promoting a strong, working relationship with Aboriginal communities.

Suggestion # 1

The Company should consider including statements of support for Aboriginal peoples and communities in its Policy Statements.

In the case of MNR there are broad and widely-encompassing documents such as the Policy Framework for Sustainable Forests, Beyond 2000, Ontario's Framework of Forest Policy and Authority and the legislation of the Crown Forest Sustainability Act. MNR staff were knowledgeable of their corporate policies and legislation related to SFM.

3.2 PUBLIC PARTICIPATION

3.2.1 Local Citizens Committee

The Ministry of Natural Resources is required, under the terms and conditions of the Class Environmental Assessment by the Ministry of Natural Resources for Timber Management on Crown Lands in Ontario¹⁰ (Term and Condition #4), and under the 2003 Declaration Order (Condition 5) to establish a Local Citizens Committee. The Committee's goal is to represent interests of the public in the planning process, aid in development of the plan and keep the public informed as to the progress of writing the plan.

The Ignace Local Citizens Advisory Committee (LCAC) played an active role in the development of the 2000 FMP for the former English River Forest. Regular meetings were held during the period of plan preparation, and members contributed to the Plan and attended public information sessions as expected. No representative from the LCC was on the Planning team and this caused some concern as the plan was developed, however, the LCAC provided written comments to the Planning Team concerning the Objectives and Strategies of the Plan. During the period of plan preparation, eight members from the community were on the LCAC and represented a variety of interest areas.

On February 1, 2000, the Chair of the LCAC prepared a letter on behalf of the Committee in an Issue Resolution Procedure regarding the Gulliver River Bridge. This well-written letter is an excellent example of how a LCC can contribute to the solution of forest management issues.

¹⁰ Koven, A. and E. Martel. 1994. Reasons for Decision and Decision – Class Environmental Assessment by the Ministry of Natural Resources for Timber Management on Crown Lands in Ontario. Ontario Environmental Assessment Board.

Prior to the amalgamation of the Brightsand Forest and the former English River Forest, an LCC existed for each of these forests. As part of the process of amalgamation, the Brightsand Forest LCC was disbanded and members of that LCC were invited to be part of the new English River LCAC, based in Ignace. The approach to preparing a new Forest Management Plan and forming a new LCC was discussed at a February 21, 2001 meeting in Thunder Bay. Two members of the Brightsand LCC chose to join the Ignace LCAC.

When efforts on development of the 2004 FMP began in late 2001 and early 2002, there were eight members on the LCAC. Throughout the planning period the Committee played an active role in the process. They were involved in an Issue Resolution Procedure, and participated in the amendments and open houses as expected.

Although the LCAC was provided with an opportunity for one of its members to join the Planning Team, no one was available due to work commitments.

By the time of the Independent Forest Audit in September 2005, resignations from the LCAC had reduced the committee to just four people. In response, the MNR had initiated a recruitment process, and has applications from six people who want to be part of the Committee during the next few years. This is a positive development, and the Ministry is encouraged to continue the process and appoint people to the LCAC as soon as possible. With just four people on the LCC, it's obvious that not all the interests identified in the FMPM could be represented on the LCC. Balancing interests and achieving representation from a broader constituency is one of the objectives in the MNR's recent attempts to increase the size and capacity of the LCC.

As well, every effort should be made to appoint an LCAC member to the Planning Team for the next plan. A volunteer is available to join both the LCAC and the Planning Team from the Lac des Mille Lacs First Nation. This opportunity is very timely and can provide a needed boost to the next Forest Management Plan.

The current terms of reference for the LCAC are dated 2002, and given that the committee is expanding from its current size of four, and will play a role in the development of the next FMP, it is appropriate that the terms of reference be updated. The MNR has initiated a process to update the Terms of Reference for the LCC as per the requirements of the 2004 FMPM.

3.2.2 FMP Standard Public Consultation Process

Some aspects of the level of communications between the Company and the public-at-large impressed the audit team. As an example, during the preparation of the 2000-2005 (former) English River Plan, the planning team exceeded its public consultation requirements by hosting a separate series of information meetings in Ignace, Dryden, Savant Lake, and Sioux Lookout in September 1998 and in April 1999.

Staff from Bowater and MNR routinely met with members of the public to discuss and resolve concerns raised throughout the development of the 2004-2024 FMP. Letters, meetings, phone calls, newspaper ads, mail-outs, and information centres were all used to communicate with the public.

The formal public consultation for the 2004 FMP normally consisted of ads in the Ignace Driftwood newspaper, a mail out to 515 individuals and organizations on the Ignace Area mailing list, and open houses held in Ignace and Thunder Bay. The mailing list had all the required organizations and individuals on it, except for the Canadian Department of Indian Affairs. A total of six Environmental Bill of Rights (EBR) notices were placed on the EBR website.

A total of 78 comments were received pertaining to the 2004-2024 FMP and these were summarized by respondent. A total of 63 of these comments were also related to the 2004-05 Contingency FMP/AWS. The bulk of the comments came from private camp or cottage owners, tourist outfitters, the general public and trappers.

Table 4. Summary of groups which provided responses to public input requests for the 2004 FMP and Contingency Plan.

Respondent Group	# Responses
Private Camp Owners	23
Tourist Outfitters	20
General Public	13
Trappers	11
Government	3
First Nations	2
Local Interest Groups	2
Provincial Interest Groups	2
Campground Owners	1
Baitfish Dealers	1
Total	78

The planning team was diligent in responding to the public comments using phone calls, letters and meeting directly with the concerned individuals. Notwithstanding concerns regarding contentious harvest blocks which arose during the development of the Contingency Plan (discussed in more detail in Section 3.3.8), planned harvest areas and access were dropped or modified to address the public concerns. All comments and responses were included in the public consultation binder.

Additional aspects of public consultation, including discussions of shortcomings of ads used to inform the public of the contingency plan are described in Section 3.3.8.

3.2.3 Native People's Consultation

The Wabigoon Lake Ojibway Nation, the Saugeen First Nation, and the Lac des Mille Lacs First Nation all have an interest in the English River Forest. The Wabigoon and Saugeen are located on lands adjacent to the Forest, and although the Lac des Mille Lacs First Nation does not have a community, the English River Forest area is part of their traditional territory.

The Ministry of Natural Resources was required through T&C 77 of the Class EA (updated to Condition 34 of the Declaration Order) to conduct negotiations with Aboriginal People in order to identify ways of achieving a more equal participation in the benefits provided by forest management. Paragraph 21 of the SFL for the English River

Forest makes similar requirements of the Company.

None of these communities elected to engage in the First Nations' Consultation Process. The circumstances related to their involvement and interest in the English River Forest are described below.

Wabigoon Lake Ojibway Nation (WLON)

The Wabigoon Lake staff have been active participants for in the 2000 and 2004 English River Plans. Numerous discussions with MNR have occurred and several problems concerning wood that could be made available to the First Nations have been considered. From our discussions with the Wabigoon Lake representative, it is clear that mutually satisfactory solutions have not been found for the issues raised.

The Wabigoon Lake Ojibway Nation believes that the MNR obligation under T & C 77 of the Class EA and Condition 34 of the Declaration Order to find ways for First Nations to participate in receiving benefits from forest management can be met through the forest management planning process. The MNR, however, believes that neither the Forest Management Planning Process nor the FMP Native Consultation Process is the mechanism to negotiate new opportunities for First Nations to receive benefits in forest management. Instead, MNR sees its obligations in T&C 77 and Declaration Order Condition 34 as applicable to a wide range of activities, both inside and outside the English River Forest. While this dispute is not yet resolved, the MNR and WLON have agreed to attempt a new approach to achieve the results called for by T&C 77 and Declaration Order Condition 34. WLON will negotiate specific contracts/agreements with industry through existing Letters of Intent and will participate in the FMP Native Consultation Process. MNR has also agreed to meet with WLON representatives to look for ways to provide more benefits from forest management as well as other activities.

Talks between the District Manager and WLON representatives are underway and will continue in efforts to work towards solving this problem.

While it still held the SFL for the English River Forest, Avenor signed a Letter of Intent with the Wabigoon Lake Ojibway First Nation in September 1995. (Avenor was the SFL holder immediately prior to Bowater.) The Letter of Intent suggested that the First Nation consider building a tree nursery, helped the First Nation to develop a business plan, helped establish a board of directors, and committed to purchase nursery stock. Following Bowater's purchase of Avenor in the summer of 1998, the Company re-signed the Letter of Intent with the First Nation in May 2000.

Since the opening of the Nursery in May 2000, Bowater has purchased approximately 2 million seedlings per year or 40% of the annual production. The nursery employs 8-10 full-time employees and up to 40 seasonal workers.

Every year since 2000, Bowater has also provided a 2-month summer First Nation Ranger Program for 30 high school students from 9 First Nation Communities in Northwestern Ontario. Wabigoon First Nation youth have participated in this program every year where they learn about the forest industry and acquire job skills in silviculture. This program won the Megwekob Magazine's Annual Award for 2000, and the Foundation for Rural Living Award for 2001.

Lac des Mille Lacs First Nation

Membership of the Lac des Mille Lacs First Nation (LMLFN) is scattered across the landscape with the majority residing in Thunder Bay, Fort Frances, Kenora, Atikokan, Ignace, Valora and surrounding areas. Little or no input from this group was provided in the 2000 or 2004 English River Plans.

The English River Forest is traditional territory for this First Nation, and with a new administrative structure located in Thunder Bay, the band is ready to play a role in the next forest management plan. After meeting with the Dryden District Manager in October 2004, the band has selected a member to be on the Local Citizen's Committee and this person will also be part of the Planning Team for the next Forest Management Plan.

In discussion with the Audit Team in September, both the Band Manager and the selected representative were enthusiastic about the upcoming participation in forest management planning. This attitude bodes well for future cooperation with the MNR - the future prospects for working with this First Nation is positive.

Objiway Nation of Saugeen (ONG)

Despite repeated attempts to engage this First Nation in the Forest Management Planning process, the MNR and the Company have not been able to convince them to be part of the effort to develop a plan for the English River Forest. Letters have been sent to the Chief, staff from MNR and the Company have travelled to the community just north of Savant Lake and opportunities to view the draft plans have been provided. The community has not been willing to participate.

This is a frustrating situation for both the MNR and the Company. Staff from both organizations expressed a willingness and commitment to continue to attempt to engage the First Nation.

Given the MNR and Company legal requirements, and the records of the two organizations in attempting to engage First Nations on the English River Forest, the audit team does not believe a recommendation in this regard is necessary.

3.2.4 Annual Work Schedule Public Inspection

The LCC reviewed the Annual Work Schedule (AWS) through a presentation made each year by the Company. The AWS was made available and advertised each year for public review, but as discussed in Section 3.3.8, the public was not provided with sufficient review opportunities for the 2004 Contingency Plan/AWS.

3.3 FOREST MANAGEMENT PLANNING**3.3.1 Planning Team Activities**

The planning team was established in November 2001, which was believed to be ample time to prepare the FMP that would allow operations to proceed on April 1, 2004.

The terms of reference were prepared and submitted by the plan author on January 30,

2002, and approved by the Dryden District Manager and the Northwest Region Regional Director in May of 2002. The terms of reference met all of the required elements identified in the 1996 FMPM. The terms of reference were revised on two occasions. The first revision was to the membership of the planning team, steering committee, and plan advisors as well as their respective roles and responsibilities; the second was to revise the plan schedule, map schedule and public consultation schedules to reflect the delay in plan preparation, review and approval and accommodate the contingency plan.

The 2004 FMP planning team was comprised of six individuals including: a contracted plan author and co-chair, Bowater's area forester, an operations planner from Buchanan Forest Products Ltd. (BFP), and three MNR staff – the area forester, biologist and resource analyst. As noted above, a position on the planning team for an LCC representative was not filled due to capacity issues on the LCC.

The planning team was supported by six Company R.P.F.'s and a consulting ecologist who served as advisors. There were also MNR district advisors with expertise in forest management, fire, information technology, Geographic Information Systems (GIS), planning, native liaison, and parks, and regional and provincial MNR analysts, foresters, biologists, geologists, planners, and specialists in cultural heritage and tourism. A steering committee comprised of senior MNR and Bowater staff was developed to oversee the planning process and provide strategic advice and direction and issue resolution support to the planning team. Overall the planning team had adequate representation of professional foresters and biologists and a capable team of advisors to address all of the planning requirements.

The planning team was supported by nine task teams responsible for specific tasks or issues. The task teams were: timber allocation, wildlife, stakeholder, landbase and information exchange, modelling, information centre, silviculture, public consultation, and growth and yield. One issue was the fact that the plan author was only a member of the information centre and public consultation task teams, but not a member of any other task teams, some of which are critical to plan development. The auditors cannot see how the plan author can adequately direct the development of the FMP when that person is not a member of important task teams such as modelling, silviculture, timber allocation, and stakeholder consultation. Although interviews with planning team members indicated that the task teams shared information with them, this level of involvement is not enough to placate the audit team's concerns.

Recommendation # 1

In the preparation of the 2009 FMP, the plan author should be a member of task teams (or similar groups) which provide key components of the Forest Management Plan.

The planning team appeared to be well organized and met on a monthly basis throughout the development of the 2004 FMP. A total of 33 informal and formal planning team meetings occurred during the development of the 2004 FMP. In addition, there were a few meetings of each of the nine task teams.

Meeting minutes and a list of action items were prepared for each meeting. The action items were reviewed at the start of each subsequent meeting and were either closed if they had been addressed or left open if there was still action to be taken.

The planning team was faced with significant delays in the development of the 2004 FMP related to problems with the new planning inventory and developing and finalizing the marten cores, caribou mosaic, and wood supply. The first open house was delayed 6 weeks, the second open house was delayed 8.5 months, the draft plan submission was delayed 6.5 months and plan approval was delayed by about 13 months. There were also significant delays in the contingency plan, annual work schedules and annual reports during the audit period.

Most of the FMP delays originated from a lengthy delay in rectifying problems associated with the planning inventory. Not only was this a new forest resource inventory for the English River Forest, it also had to follow the new planning inventory format described in the 2001 Forest Information Manual (FIM)¹¹. However, the exact planning inventory format was not finalized until January 15, 2005, when the final version of the "Technical Specifications for Providing Stewardship and Planning Inventory Information" were published. Various Draft versions of the technical specifications were made available in 2004 to provide direction for 2006 planning teams. Therefore the planning inventory specifications were not clearly outlined for the planning team.

The most significant planning inventory errors consisted of:

- both large and small slivers due to the updating of the NAD 83 Forest Resource Inventory (FRI) with historical harvest depletions, silviculture and roads information based on Lambert's NAD 27 projection;
- errors in polygon attributes due to digital updates; and,
- polygon shifts (i.e. either a sliver of mature timber left outside of a cut block or a sliver of regeneration within a cut block).

Initially there was reluctance on the part of the Company to address the errors in the planning inventory, however through discussions with MNR staff, an agreement was reached for the Company to address the errors. The process of discussing whether and how to fix the errors and the subsequent process of addressing the errors contributed significantly to the delay in plan production.

The Ontario Public Service strike in the spring of 2002 also meant the planning team was in-active for a few months. During this time senior MNR managers agreed that, in order for work on the plan to proceed, some efforts should continue with plan development by Company staff during the strike. MNR managers note that this was done with the explicit proviso that Bowater staff would update and get buy-in on the work from MNR staff once the strike was over. Company staff related to the audit team that once the strike was resolved, MNR district staff revisited many of the decisions, leading to further delays. However, MNR staff point out that, Bowater did not provide adequate rationale and documentation of the work that was done during the strike. MNR staff note that they believed there were shortcomings in the Company's efforts related to SFMM and habitat modelling, and in particular on the caribou mosaic. Given these concerns, MNR staff felt the need to ensure that more effort was devoted to these areas of the plan.

MNR staff on the planning team also related to the audit team that they did not have any meaningful input into the modelling prior to it being presented at the first open house,

¹¹ Ontario Ministry of Natural Resources. 2001. Forest Information Manual. Queen's Printer for Ontario.

and that they did not agree with the selected management alternative which was presented. Unfortunately, this type of discord was not uncommon during the preparation of the FMP.

The planning team also had major problems making decisions and resolving issues particularly around marten cores, the caribou mosaic, and the wood supply. Differing objectives and severe personality conflicts between members of the Bowater and MNR planning team staff polarized the planning team and limited its ability to make consensual decisions and negotiate key trade-offs. MNR and Company staff both described the planning team as "dysfunctional". The planning team's difficulties forced much of the decision-making responsibilities onto the steering committee, which was not the original intent of this committee, and for which it was not well equipped by virtue of its lack of technical expertise. This was particularly true for MNR members, who stated that they felt at a disadvantage on the committee when it came to technical decision-making. Only later in the planning process did the MNR members of the steering committee begin to tap regional technical expertise to assist with decision-making. In fact, the MNR district manager or area supervisor and Bowater manager of planning and fibre supply, who were all steering committee members, started attending most of the planning team meetings. This only served to enhance the planning team dysfunction and inability to make decisions. The inability of the planning team to make decisions meant that many of the planning team meetings became unproductive and too many issues were brought to the steering committee for decision making.

The limited productive capacity of the planning team was also caused by: a lack of a key contact person empowered to make key decisions and coordinate tasks within Bowater, a division of planning tasks among a number of different Bowater departments; and a limited amount of interchange between the MNR and Bowater during the development of specific products.

To the credit of the Company and local MNR, both parties have recognized that the planning process as it was implemented in the development of the 2004 FMP was dreadful. Senior staff from the Company and MNR, working with their staffs, developed detailed plans for addressing the problems with the last planning process. The Company and the Ministry are attempting to improve their rapport and implement the measures identified in the plans.

Some items identified in these plans overlap with recommendations made below and elsewhere in this audit report. The audit team is tabling the recommendations to reinforce the importance of addressing the issues and provide support for the Company and Ministry as they attempt address the host of issues.

Recommendation # 2

The terms of reference for the 2009 FMP should clearly empower the plan author and planning team to make decisions. The use of the steering committee, if included in the 2009 FMP Terms of Reference, should be for addressing strategic issues only.

Additional discussion on the efforts of the Company and Ministry to work towards improving their relationship is provided in Section 3.5.1, and a recommendation (Recommendation # 29) is tabled there as a way of entering these efforts into the record of this audit and to track progress made in implementing them.

3.3.2 Resource Stewardship Agreements

One of the requirements associated with the production of the 2004 FMP is that the Company is required to contact all registered tourism outfitters on the forest management unit and offer them the opportunity to negotiate a Resource Stewardship Agreement (RSA) with the Company. RSA's are a relatively new tool that is available for SFL- holders and remote tourism outfitters to negotiate and agree on ways of facilitating the coexistence of both businesses on the same landbase. RSA development, if a tourism operator decides to pursue an agreement, is a process that proceeds independently of the FMP planning process. When an RSA is successfully concluded, aspects of the agreement that are relevant to the management of the Crown forest must be brought into the FMP.

The Company contacted all registered tourism outfitters on the forest and offered to pursue the negotiation of an RSA if they were interested. Initial contact was by registered mail, followed by telephone calls from the Company. The Company conferred with both MNR and the Ministry of Tourism regarding the rate and nature of the responses, and the Ministry of Tourism also made contact with some of the non-respondents to encourage them to respond.

Of the 61 registered tourism outfitters contacted, roughly 25 had an interest in negotiating an RSA, and roughly half of those decided there was no need to pursue an RSA at the time because their camps are located in areas where Bowater was not anticipating that there would be forest operations during the 2004 plan period. The end result was that there were three RSA's concluded during the audit term, two of which were signed by one party in March 2005 and by the other party in mid-April, 2005. The first RSA was signed by the outfitter and Bowater by June 4, 2004. This RSA did not create any planning conflicts, nor did planning create problems for the implementation of the RSA. This smooth reception reflected the Company's efforts to keep the MNR informed of the relevant approaches being pursued in the agreement, so that there would be no surprises once the RSA was completed. The Audit Team concludes that the Company followed RSA process well during the audit period.

The Company provided maps for the inclusion in each individual RSA that included not only the values to be protected but also the AOC's developed to protect those values, and also the harvest allocation and the stands that would become eligible for harvesting within the 20-year timeframe covered by the agreement. These additional features, which exceeded requirements, are very useful in promoting an understanding of the scope and manner of protection provided by the RSA.

The Company noted that one issue which arose during the RSA process was a question of whether the agreements were legal agreements. Bowater argued that the Company was already legally bound to follow the parts of the RSA that were within the scope of the FMP process, and that it was not in their interest to negotiate an RSA and then not live up to the terms. Bowater staff also said that not following an agreement would violate their standards of professionalism, as well, and for all of these reasons, there was not a need for a separate second legally binding agreement. Bowater reported that some individual operators favoured the position that the RSA's should be legal documents. In the end, the tourism operators agreed to proceed without making the RSA's a separate, legally-binding agreement, and negotiations proceeded.

The Company also indicated that there was no place in the relevant documentation describing RSA's where the purpose of RSA's was clearly stated. The Company developed an RSA template that included a statement of purpose. The Audit Team also could not find a direct statement that states what the purpose of an RSA is, and feels that it would be beneficial to all parties to have one.

Suggestion # 2

Corporate MNR should develop, with consultation from relevant organizations such as the Ministry of Tourism and NOTO, a statement that clearly identifies the purpose of an RSA and add this statement to relevant guides and RSA information documents.

3.3.3 Sources of Direction

The FMPM requires that forest management plans pay heed to a variety of sources of strategic and planning direction, including:

- MNR's provincial goals, objectives and policies for natural resource management;
- Forest management guides (implementation manuals);
- Applicable regional- and district-level land use direction;
- MNR internal operational audits and independent audits for the management unit;
- Strategic business direction for forest-based businesses;
- The results of ongoing negotiations with Aboriginal peoples whose communities are situated in the management unit; and
- Licences regarding resource management on the Forest.

This audit found that the sources of direction were used and referred to at appropriate points in plan development. It may be argued that some of the issues identified in this audit reflect a lack of adherence to the sources of direction noted above (e.g. the lack of adherence to the FMP preparation schedule in the planning team's terms of reference [Section 3.3.1], and the issues related to approval of the contingency plan [Section 3.3.8]). In the plans we reviewed in this audit, the various sources of direction are appropriately documented, and all the relevant sources of direction are available at Bowater's Ignace and Thunder Bay offices.

3.3.4 Plan Introduction

The Introduction sections of the FMPs reviewed contain the elements required by the FMPM. Each includes an index to the environmental components of the Plan and a brief description of how MNR's Statement of Environmental Values under the Environmental Bill of Rights had been considered in plan development.

3.3.5 Management Unit Description

The Management Unit Description component of an FMP sets the stage for the strategic and technical aspects of the plan which follow. Although this portion of the plan is generally not lengthy or complex, its importance lies in that it is intended to be reflective of the effort that the forest managers have devoted to gathering information about the forest and of their understanding of the forest. The section also provides readers with context upon which to understand the nature of the forest. With the exception of the

wildlife requirements, discussed below, the 2004 FMP contained the management unit description sections required by the FMPM.

Forest Resource Inventory

The Forest Resource Inventory (FRI) used in the preparation of the 1999-2004 FMP for the Brightsand Forest and the 2000-2005 FMP for the English River Forest was a 1976 inventory. For the preparation of the 2004-2009 FMP for the merged English River Forest, a new inventory was introduced, based on air photography acquired in 1996. The 2004-2009 FMP reports that the total Crown managed production forest area in the English River Forest is 780,913 ha. Of this total, 16,108 ha, or 2.1%, is in the Barren & Scattered category, while an additional area of 110,964 ha, or 14.2%, is in the depleted category, for a total of 16.3%.

A large portion of the depleted stands, approximately 40,244 ha, represent areas that were burned by wildfires following the acquisition of the photography in 1996. The remainder of the area consists of harvest depletions and areas depleted by windthrow. Harvest depletions for the period from 1995 to 2003 are approximately 59,088 ha. The remaining depleted area of 11,588 ha consists of pre-1996 depletions that are pending free-to-grow surveys.

For the preparation of the 2004 FMP, the inventory was updated to reflect actual harvest depletions up to March 31, 2001 and natural depletions from forest fires that occurred in 1996 and 1998. Forecasted harvest areas from 2002 to 2005 were also included in the update. Free-to-grow survey information from 1985 to 2002 was used to update spatial information and stand attributes of depleted and barren and scattered polygons. Historical silvicultural records from 1985 to 2001 were used to tag polygons without corresponding free-to-grow information with development stage and silvicultural intensity attributes for modeling purposes.

Wildlife

In the 2004 FMP, the portion of text devoted to wildlife on the forest does not follow the direction of the FMPM, which notes "At a minimum, the contribution from, and importance of, the management unit in providing provincially and locally featured wildlife species, as well as rare, vulnerable, threatened and endangered wildlife species must be provided. In addition, species for which preferred habitat is declining or lower than expected on a regional basis should be identified ...". Although the plan provides descriptions of habitat for moose, caribou, and marten – all featured species in the boreal forests of Ontario, no descriptions of other species which fit the descriptions above were provided. As noted in Section 2.2.2, there are other species at risk which are confirmed or likely to exist on the Forest; with the exception of caribou, these are not described in the plan. Furthermore, as documented in Tables FMP-5 and FMP-13 there are several other species whose preferred habitat is declining on the Forest; there is no evidence in the plan to indicate that regional trends in the habitat for these species were examined. These species are not identified or discussed in this section of the plan, as is required. The revised (2004) FMPM will be in place when the next plan is written and contains a requirement for comparable information.

Recommendation # 3

The planning team for the 2009 FMP should ensure that that Plan contains the required text related to wildlife in the Management Unit Description section.

3.3.6 Objectives and Strategies/Management Alternatives

The IFAPP directs the Audit Team to review the set of management objectives, targets and strategies developed for the 2004 FMP, and evaluate the selection and assessment of management alternatives considered in developing the selected plan direction. The objectives, strategies and management alternatives in the 1999 Brightsand FMP and the 2000 former English River FMP were reviewed in the 2000 IFAs for those management units.

3.3.6.1 Management Objectives and Strategies

The CFSA and the FMPM require forest management plans to contain objectives that address forest biodiversity, social and economic matters, silviculture, and the provision of forest cover for relevant values. The planning team for the 2004 FMP provided a set of forest management objectives that spanned these four aspects, and thereby met planning requirements. The objectives and associated targets are presented in Table 22 below, along with a preliminary assessment of the extent to which the objectives and targets are being met.

The set of objectives provided in the 2004 FMP projects a vision guided by adhering to legal requirements and taking other users and values into consideration. The plan contained two objectives specifically intended to address biodiversity (although several of the forest cover objectives also have biodiversity connotations). The first biodiversity objective (landscape diversity) strongly reflects implementation of the Natural Disturbance Pattern Emulation Guide¹² (NDPEG). The second objective (old growth) reflects implementation of the province's old growth policy. Some strategies related to the objective (i.e. those related to red and white pine) were requirements of the old growth policy in place at the time of plan writing; while other strategies (i.e. those related to other forest units) exceeded the requirements in place at the time, and reflect the requirements scheduled to come into effect for 2006 plans. However, the audit team has concerns that the process used to identify old growth targets, and the targets themselves are deficient (see discussion in Section 3.3.6 and Recommendation # 6). In general the audit team found the biodiversity-related objectives to be rather limited, but sufficient in scope to satisfy the requirements of the FMPM and related policies in place at the time the plan was written.

The social and economic objectives are the same ones used in the 2000 former English River FMP, and they revolve around provision of timber supply, the application of legally binding guidelines (regarding Tourism Values), provision of road access (forestry roads that are not restricted are automatically available for public use), and consideration of the concerns of other businesses, private landowners, and values in parks. The objectives related to forest cover and silviculture are general and usually have qualitative targets. In the case of marten, the main instance where there is a quantitative target

¹² Ministry of Natural Resources. 2001. Forest Management Guide for Natural Disturbance Pattern Emulation. Queen's Printer for Ontario. Toronto..

[which is the target established in mandatory provincial guidelines], the plan, debatably, does not meet the target. (See discussion in Section 3.3.6)

3.3.6.2 Management Alternatives

The forest management planning process set out in the 1996 FMPM requires that the planning team evaluate different approaches to managing the forest and select the one that best provides a suitable, sustainable outcome and meets plan objectives and targets. The 1996 FMPM stipulates that a benchmark, no-harvest scenario be modelled, as well as three specific alternatives:

- Maximum available harvest subject to available silvicultural trust fund amounts;
- Maximum available harvest with unlimited silvicultural spending; and
- Meet anticipated industrial demand with unlimited silvicultural funding.

Planning teams are urged to develop and investigate other management alternatives; in this case, the planning team for the 2004 FMP developed one other alternative that maximized the wood supply subject to the funds available in the renewal trust fund. This management alternative was identified as the selected alternative and formed the basis for the further development of the FMP.

The assessment of the ability of the selected management alternative to meet the objectives observed that the abundance of red pine would exceed the upper target level from year 2024 onwards, and the area of the poplar forest unit (PO1) would also exceed the upper bound at year 2024 and rise slightly thereafter. On the other hand, the area of mixed conifer dominated stands with minimal hardwood (MC1) declines to the minimum bounds (actually 1% below minimum) due to the low intensity of silviculture applied to the forest unit. MNR and Company staff both felt that due to fire suppression, the current level of MC1 in the forest is notably higher than historic levels and so the reduction is seen as an appropriate management direction. In addition, the habitat provided for four species drops below the minimum permissible level for one or two terms. Although it is not reflected in the main body of the plan text, the audit team was told that there was considerable discussion amongst the planning team as to whether the selected marten core configuration meets the plan's objectives (Marten habitat is discussed more fully in Section 3.3.7).

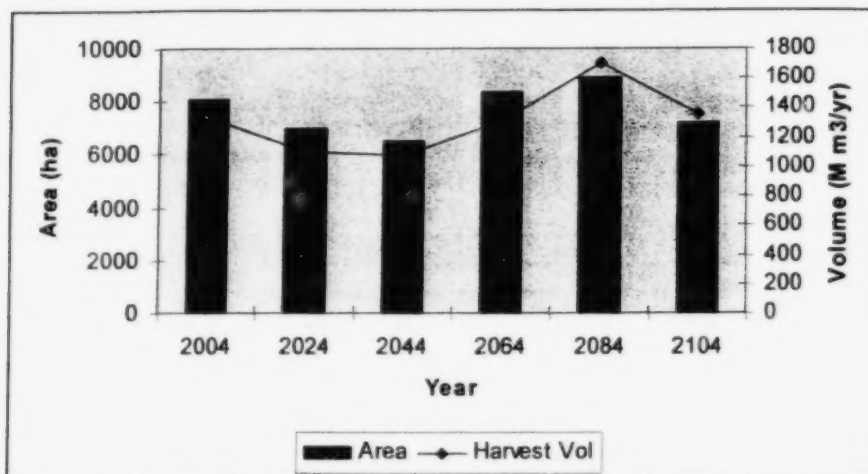


Figure 3. Projected Allowable Harvest Area and Harvest Volume on English River Forest (Source: FMP-12, 2004 FMP)

The forecast harvest level shows a decline over the first forty years (the decline actually extends for about fifty years) to a low point which is 20% less than the initial period harvest, before the harvest begins to rise sharply. It is notable that the modelling of the future harvest retains marten core areas for the first sixty years of the projection, as per provincial direction, however, it does not account for the provision of marten cores in perpetuity. Because it is anticipated that the provision of marten core areas will continue to be a forest management requirement, it is likely that the expected increase in harvest from 2064 onwards will be less than forecast.

The FMP states that all management alternatives considered, including the selected management alternative (SMA), were sustainable based on the FMPM indicators of sustainability. As is described below in Section 3.3.8, a number of MNR staff expressed strong reservations about the sustainability of the SMA and the audit team has concluded that the plan is not sustainable (Section 3.7.4).

Forest Management Plan Data - Yields

One of the key pieces of data used to develop estimates of future wood supply is growth and yield information, which is developed for each forest unit, for the present forest and for renewal at each level of management intensity. One of the 2004 FMP task teams was responsible for the development of the yield curves and succession rules. This task team had MNR District and Regional members, as well as Company members, and it met at least several times during 2002 in the course of developing the curves. With one critically important qualification, the work program followed by the task team was sound, including work steps such as literature review, consideration of data sources such as permanent sample plots, discussions with operational staff, and field work measuring the volumes present in stands of different forest units and ages.

Because the hardwoods cut on the English River are generally chipped, the yield curves developed for these species incorporated chipping factors, which recognize the increased volume of wood that can be utilized from a tree when it is chipped, because

the top is used as well as the bole. Studies to determine chipping factors have been undertaken and published by Bowater staff¹³, and in addition there are chip expansion factors that were determined under one of the program areas of Ontario's Forest Accord (OFA). According to members of the task team who were interviewed, the full OFA chipping factors were not applied to hardwood yields because the task team wanted to err on the side of being conservative, and so, for example, poplar yields were increased by about 10% instead of the full 28% represented in the OFA factor.

The yields of the coniferous species were not adjusted to account for chipping, since those species are usually not chipped unless both Company sawmills (Ignace and Thunder Bay) are temporarily shut down. However, the debarkers at the Thunder Bay mill were re-configured to permit debarking down to a 5 cm top, which is smaller than the 7 cm top diameter than was previously possible, and conifer yields were increased by 3-5% to account for the increased utilization as a result of this improvement.

The other factor that drove yield curve development was the agreement among task team members that an average yield of 161 m³/ha was reasonable from the English River Forest, and that yield curves should reflect this. None of the interviewees remembered exactly where this figure came from, but it had been accepted by all task team members and was reasonable from the perspective of the operations staff.

The end result was a set of yield curves that yielded an average planned harvest of 165 m³/ha in the 2004 plan period, and varied between 157 and 165 m³/ha through to year 2064, after which it increased to roughly 190 m³/ha as the more intensively managed second growth stands made up a substantial portion of the harvest.

Unfortunately, the expected yields are not materializing.

The important qualification from the Audit Team's perspective of the growth and yield task team's approach was that the performance in previous plan periods was not considered. Had it been, this would have showed substantial shortfalls in actual yields compared to planned yields in the previous plan periods. While the Annual Report for the 2004-05 year was not available at the time of the audit site visit, the average normal harvest yield from the former English River Forest was 131 m³/ha between 2000 and 2004, and it averaged 125 m³/ha on the Brightsand Forest between 1999 and 2004. The average planned yield per hectare in the first period of the 2000 English River FMP was 164 m³/ha, and it was 137 m³/ha in the first period of the Brightsand Forest. These differentials are shown below in Figure 4.

¹³ Archibald, D.J., N. Fisk, and L. Maunu. 2000. The Analysis of White Birch Fibre Volume from Wood Below Minimum Top Diameter in Full-Tree Chipping Operations. Bowater, Forest Products Division, Thunder Bay Woodlands Operations.

Archibald, D.J., Bloomfield G., and M. Ferguson. 1999. The analysis of fibre volume from wood below minimum top diameter in full-tree chipping operations in northwestern Ontario. Bowater Forest Products Division, Thunder Bay, Ontario.

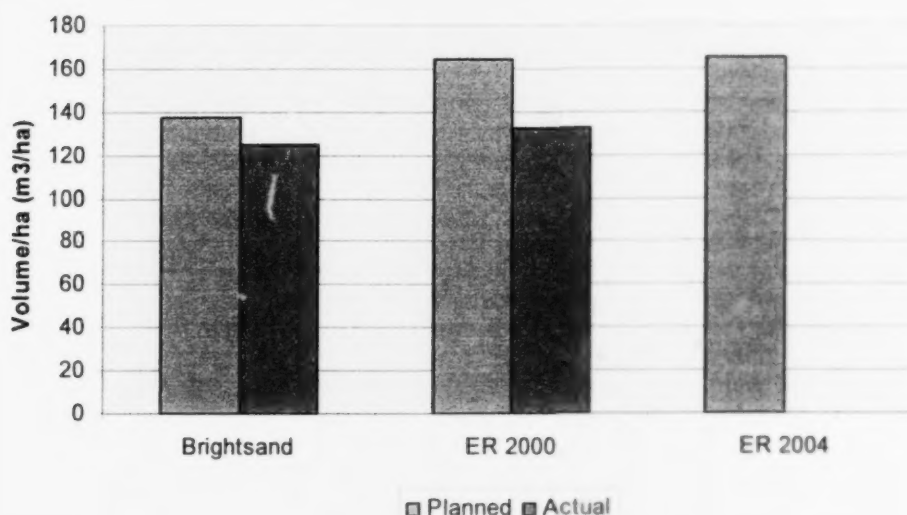


Figure 4. Comparison of Planned versus Actual Harvest Yields (m³/ha).

When the actual harvest yields that were obtained on the Brightsand Forest (125 m³/ha) and the former English River Forest (131 m³/ha) are compared with the yields expected in the 2004 FMP, which range between 157 and 165 m³/ha through to year 2064, it is apparent that the magnitude of the overstatement is in the order of 20%.

The Company acknowledges that yield curves used in the current FMP have over-estimated the actual yields, and staff felt that there had either been some operational problems that prevented the anticipated level of utilization from being reached, or else some faulty assumptions were included in the growth and yield curve development. The audit team was not aware of any operational changes made by Bowater during the course of the audit period, other than the move to a smaller top diameter, which suggests to the audit team that the overestimate came about in the curve development process. The audit team also observes that this same issue was raised in the 2000 IFA report for the English River Forest, which covered the 1995-2000 period: "Because of an old Forest Resource Inventory, the Company was finding that their actual harvest yields were less than predicted in the management plan."

In order to provide an indication of whether the planned yields might be too high, the Audit Team compared the 2004 English River FMP yield curves to those used in the 2000 English River FMP, the 1999 Brightsand FMP, the 2003 Wabigoon FMP, and the draft 2006 Spruce River FMP. (The Wabigoon and Spruce River Forests abut the English River Forest to the west and east.) The peak total yield per hectare in the present forest, and the age at which it occurs, are summarized in Table 5 for key forest units. Note that many of the forests had similar forest units (e.g. all forests had a lowland spruce forest unit) but some forest units that were used in the 2004 English River FMP did not match well to forest units in other forests, and so the table cell has been left blank (e.g. Brightsand and Wabigoon did not have a balsam fir forest unit). Shaded cells indicate, for each forest unit, which forest has the highest mean annual increment (MAI) at peak volume. The mean annual increments are shown in Table 6.

Table 5. Comparison of Present Forest Maximum Yields (m³/ha), and Associated Ages, on the English River Forest (2004 and 2000 FMPs), the Brightsand Forest (1999 FMP), and the Wabigoon and Spruce River Forests FMPs.

Forest Unit	English River 2004	English River 2000	Brightsand 1999	Wabigoon 2003	Spruce River 2006
Balsam fir	(160,75)	(170,85)			136, 95
Jack pine	(199,85)	(190,85)	(180, 85)	(190, 85)	179, 95
Spruce Lowland	(119, 120)	(100, 140)	(105, 125)	(100, 105)	107, 135
Spruce Upland	(166, 105)	(160, 105)	(145, 105)	(177, 75)	166 105
Other Conifer	(109,115)	(110,125)		(93, 95)	
Poplar	(226,65)	(255,80)		(210, 75)	155, 75
White Birch	(137,65)	(130,80)		(189, 75)	123, 85
Mix Conifer1	(201,85)	(201,100)		(192, 85)	142, 95
Mix Conifer2	(216,75)	(240,90)			138, 85
Mix Hardwood	(199,70)	(210,85)		(180, 85)	

Table 6. Comparison of Present Forest MAI at ages of maximum volume per hectare (m³/ha/yr).

Forest Unit	English River 2004	English River 2000	Brightsand 1999	Wabigoon 2003	Spruce River 2006
Balsam fir	2.13	2.00			1.43
Jack pine	2.34	2.24	2.12	2.24	1.88
Spruce Lowland	0.99	0.71	0.84	0.95	0.79
Spruce Upland	1.58	1.52	1.38	2.36	1.58
Other Conifer	0.95	0.88		0.98	
Poplar	3.48	3.19		2.80	2.07
White Birch	2.11	1.63		2.52	1.45
Mix Conifer1	2.36	2.01		2.26	1.49
Mix Conifer2	2.88	2.67			1.62
Mix Hardwood	2.84	2.47		2.12	

These tables support the notion that the yields in the 2004 English River FMP are relatively high, as that plan has the highest peak yield mai's for seven of ten forest units for the five plans assessed. A similar analysis was done using the extensive renewal yield curves for these five FMPs and a very similar result was obtained.

The yield curves used in the 2004 English River FMP incorporated factors to account for the higher yields obtained from chipping for poplar, while the other plans, including the 2000 English River, did not. The poplar yields were increased by approximately 10% while the yields of white birch, which is also chipped, were not modified since that forest unit covers a relatively small area.

Using the peak yield, and the mai at the age of peak yield, is intended to be a shorthand way of indicating the level of yield in a yield curve. However, most stands are harvested at ages younger than the age of peak yield, and so the data in these tables provides a somewhat incomplete indication of the general level of yield. Another perspective was

obtained by considering the average yield per hectare expected over the first 105 years of the planned management alternative, taking every fourth plan period (i.e. in the case of the 2004 English River FMP, in the 2004, 2024, 2044, 2064, 2084 and 2104 plan periods). These figures appear in Table 7, and again the English River 2004 FMP has the highest anticipated yield per hectare.

Table 7. Average Harvest Volume (m³/ha), based on Future Projections.

Forest and Plan	Avg Harvest Volume
English River 2004	170.8
English River 2000	143.0
Brightsand 1999	142.4
Wabigoon 2003	143.0
Spruce River (draft) 2006	128.0 *

* for first period only

It is also worthwhile noting that the yields in the current English River FMP are higher than those used in the 2000 English River FMP and in the 1999 Brightsand FMP. The Company estimated that the snag tree retention requirements of the NDPE guideline would result in 3 m³/ha being left unharvested. This is equivalent to a 2% yield reduction and these volumes were excluded from the Company's calculation of planned harvest volume.

The audit team examined the impacts of some of the choices made by the planning team, including the impacts of the yield curves in the 2004 FMP, by modifying key constraints and data and running SFMM using the input file for the selected management alternative.

The selected management alternative included binding volume requirements in the early part of the forecast period, and when these were removed, the effect was that the harvest declined in the first thirty-five years of the simulation period but increased thereafter. The constraints increased the conifer harvest by 45,000 m³/yr during the first thirty-five years, and then decreased it by 70,000 m³/yr during the remaining 65 years. In other words, the volume constraints increased the current conifer harvest at the expense of the future harvest. Interestingly, the constraints increased the hardwood harvest throughout the simulation period by roughly 16%, or 35,000 m³/yr.

We next substituted the yield curves from the 2000 English River FMP into the input file from the 2004 FMP. As can be seen in Table 5 and Table 6, the yields used in the development of the 2000 FMP were generally lower than those in the 2004 FMP, even though the actual harvest yields in the 2000 FMP period were below planned by 20 %. The result was an overall 9% decline in the softwood harvest (equivalent to 90,000 m³/yr), and an 18% increase in the hardwood harvest (45,000 m³/yr). This analysis increased the auditors' concern that the Company has overestimated the wood supply, especially considering that the actual yields in the previous plan period were overestimated by 9% on the Brightsand and 20% on the former English River.

The implications of this over-estimation of yields are significant.

The most obvious impact is that the Company will not obtain the expected volume from the area that is harvested. This means that the Company will have to find additional

sources of volume to meet its expected wood needs. The actual cost of wood will also be higher than planned, other factors staying the same, which could create challenges for the Company. The lower volume yields will also lead to less money flowing into the Forest Renewal Trust, and since the area harvested is unaffected by the erroneous yields, the net result will be less renewal funding available per cutover hectare. This may force the Company to deviate from its planned renewal intensity, further lowering future yields.

The potential indirect effects are broader however, because if the Company experiences a shortfall of wood from the Forest and can't make up the shortfall from other sources, there is a risk that one of the mills will be forced to lose a shift or close, either temporarily or permanently. This is a concern because there are other reasons why the audit team feels that the wood supply from this forest is over-estimated. As explained below (Sections 3.3.6 and 3.4.2), the Company found that at the end of the fourth year of the 2000 English River FMP, most of the remaining areas allocated for harvest were too small and scattered to be economic. This issue also arose in the 1995 English River plan period. The audit team believes that not all of the timber that was considered to be available in the 2004 FMP is economically feasible to harvest (See Recommendation # 25 and preceding discussion),

Recommendation # 4

The Company should review the assumptions used to prepare the yield curves used in the 2004 FMP, and the actual harvest yield data, and develop more accurate yield curves for the 2009 FMP.

3.3.7 Operational Planning

Harvest

Buchanan companies traditionally harvested and processed most of the timber on the former Brightsand Forest – during the five-year period of the 1999 FMP, Buchanan harvested 99% of the timber on the Forest, with Bowater harvesting the remainder. There are wood supply agreements between the two companies that entail the sale or exchange of sawmill chips with Bowater's pulp and paper mills.

In contrast, Bowater is the main harvester on the former English River Forest, using the contractor Marcri Timber to harvest the majority of its timber. During the first three years of the 2000 English River FMP, Marcri harvested roughly 75% of Bowater's allocation. Throughout the audit period, virtually all of the hardwood that was harvested was chipped for pulp furnish. During the first two or three years of the audit period, Marcri also chipped most of the conifer that was harvested. After Bowater built the Thunder Bay sawmill and purchased the Ignace sawmill, Marcri began to cut most conifer as tree-length timber that was processed at one of Bowater's sawmills. Currently, the softwood is merchandized as roundwood, but it may be chipped when the sawmills are down or have excess inventory. Marcri is a unionized operation, and its harvest operations are usually located within a ninety minute drive of Ignace. Buchanan harvested most of the remaining 25% of the volume on the English River in the 2000-2003 period, with minor amounts being harvested by Ignace Saw (purchased early in the audit period by Bowater) and Noopimiing, a First Nations contractor.

These historical patterns complicate operational planning on the current English River Forest, due to the need to provide a sufficient area and volume to the Buchanan Group of Companies, especially in the former Brightsand Forest. In the 2004 FMP, 34% of the planned harvest was to be harvested by Buchanan companies operating in the former Brightsand Forest, and 9% was to be harvested by Buchanan companies (Mackenzie Forest Products) on the former English River Forest. It was planned that Bowater's contractors would harvest the remaining 57% of the allocated area.

There was no salvage harvesting planned in the 1999 Brightsand FMP, but 792 ha of burned timber was planned for salvage harvesting in the 2000 English River FMP and, in the 2004 English River FMP, 585 ha of salvage harvesting and 714 ha of second-pass harvesting was planned.

The operational allocations in the 2004 FMP period were well matched to the harvest areas selected by the SFMM analysis, but as is noted in Section 3.3.8, the allocations in the contingency plan were modified almost immediately after plan approval by additions created by several significant amendments. Thus, the allocation actually harvested during the contingency plan period was substantially different from the area identified in the plan. The part of Section 3.3.8 that covers amendments indicates that there have been a large number of amendments requested on the Forest during the audit period, which is suggestive of insufficient attention to detail in operational planning.

In addition, it has been noted above, and will be discussed in more detail below, that much of the Company's fifth-year allocation in the 2000 English River FMP could not be harvested economically, or had in effect been harvested during the previous plan period.

Silviculture

The Silvicultural Ground Rules (SGRs) contained in the 1999 FMP for the Brightsand Forest, the 2000 FMP for the former English River Forest, and the 2004 FMP for the (merged) English River Forest were consistent with the Silvicultural Guides that were in effect at the time. All the required elements were included and the preferred prescriptions for each forest unit were appropriate and are consistent with the selected management alternatives in the respective plans. In general, the silviculture strategies in the 2004 FMP were reasonable and well-described. The only exception to the Silvicultural Guides listed in the FMP is for full-tree harvesting on shallow soil sites (Ecosite 12). The only implementation of this exception during the audit period was related to a research trial on the effects of full-tree harvesting on these sites, conducted in collaboration with MNR's Northwest Science and Information section. The FMP contains a detailed monitoring plan and the appropriate monitoring reports have been prepared.

Forecasts for renewal and renewal support activities in the 2004 FMP are reasonable and are consistent with the selected management alternative. Renewal activities were planned for 40,987 ha, or slightly more than the planned harvest area of 40,296 ha.

The Forest Operations Prescriptions (FOPs) contained in the Annual Work Schedules (AWSs) were found to be consistent with the SGRs contained in each of the three FMPs which were in effect during the audit period.

Values

Values maps present spatial information on the location of point-specific values on the forest. The maps are maintained by the Ministry of Natural Resources through its Natural Resource Values Information System (NRVIS). Both the Company and local MNR staff reported that "official" values maps are not kept entirely up-to-date due to the cumbersome process of revising them involving corporate offices of MNR. In spite of this, the Company and the MNR have worked well together so that the values information used for operations is as accurate and up-to-date as possible. When new values are found, they are entered into the local records and this information is used in guiding operations co-incident with the formal NRVIS updating process. This process seems to be working well.

Areas of Concern

The 2004 FMP contained almost 90 unique prescriptions for Areas of Concern. Many of the AOCs were group prescriptions, intended to be applied broadly to common values. Examples of this type of AOC are moose aquatic feeding areas and cool water fisheries. There were also many prescriptions prepared for individual areas of concern. By far the most striking example of this is that there were individual AOCs prepared for 36 individual lakes. This level of consideration connotes a great deal of care and attention to detail on the part of the planning team. This audit team has not seen this level of detail in individual prescriptions before. The prescriptions are clear, and well written and should guard against any misunderstanding of their intent.

Wildlife Habitat Indicators

An important part of the forest state modelling which occurs as part of the planning process is the prediction of the habitat status for many indicator wildlife species. Consistent with direction from the MNR, the habitat status of 17 wildlife species were tracked over the course of SFMM simulations. (Although 17 species were tracked, 20 indicators were produced as for three species two indicators each were produced – moose foraging and moose winter habitat were tracked separately, as were white tailed deer foraging and winter habitat, and caribou foraging and winter habitat.) Also consistent with MNR direction, it is deemed acceptable if the habitat of each species does not fall below an amount which is less than 20% below the minimum recorded at any time during the SFMM benchmark run¹⁴. So, for example, say that in the SFMM 100-year benchmark run, the area of habitat for species X reaches a minimum of 1,000 ha; it is then deemed sustainable if there is a minimum of 800 ha of habitat (20% less than 1,000). (Habitat levels are sometimes permitted to cross below the -20% level for brief periods of time prior to reaching the year identified as the Desired Future Forest Condition (DFFC)).

For the 2004 English River Forest FMP, the habitat predictions for all the wildlife species stayed within the MNR-mandated bounds for the DFFC– the year 2084. Nonetheless, the predicted trends in wildlife habitat are a concern to the audit team. Predictions for the year 2024 are that values for 15 of the 20 wildlife habitat indicators will be lower than they are in 2004. The average decline in predicted indicators is 23%. In addition, for three indicators, the amount of habitat predicted to be available is less than the

¹⁴ The benchmark run is run to identify the state of the forest in the absence of fire suppression and timber management. For the English River Forest, the model was benchmark run simulated the forest condition for 100 years.

minimum amount simulated during the SFMM benchmark run. (Note, although the amount of habitat predicted to be available is below the minimum amount predicted by the SFMM benchmark run, it was above the MNR's acceptable level of 20% below the minimum). The situation becomes exacerbated when predictions for the year 2044 are examined. For that year, 15 of 20 indicators also have lower values than in 2004, however the average predicted decline is 44%. For eleven indicators, the amount of habitat predicted to be available is less than the minimum amount simulated during the SFMM benchmark run, and for two species, the predicted amount is slightly below the MNR-permitted value of 20% below the benchmark minimum.

The predicted changes in wildlife habitat raise some concerns; first is the fact that the trends are sharply declining. Second, the audit team is concerned that the bounds of acceptable change (which permits declines of up to 20% below the minimum encountered during the benchmark run) are too broad. The situation on the English River Forest illustrates this well. As noted above, in the year 2044, habitat levels for the majority of species are predicted to fall below levels predicted at any point in the 100-year benchmark run. For the English River Forest the benchmark run shows a marked decline in the habitat of many species (compared to present levels) - this calls into question even more the wisdom of permitting declines below the benchmark minimums.

Although the predictions from the SFMM modelling cited above are for many years in the future, the management actions taken now will obviously affect the forest condition then. Furthermore, management actions predicated on the acceptability of such declines in wildlife habitat will limit options for wildlife habitat management in the not-so-distant future.

We note that in preparing the 2004 FMP, the Company has complied with the direction provided by MNR, but we feel the MNR's direction on this topic needs considerable refinement and have addressed this in Recommendation # 5.

Recommendation # 5

Corporate MNR should revise the direction provided to planning teams which permits broad and extensive declines in wildlife habitat and habitat levels to fall below those predicted to occur in the SFMM benchmark runs.

Old Growth

The 2004 FMP contains quantitative targets for the amount of old growth to be maintained on the forest using the general direction of the MNR's Old Growth Policy¹⁵. Targets are calculated in the plan for each forest unit, using the old-growth onset ages contained in the Ministry's Old Growth Definitions Document¹⁶. The audit team has concerns that the plan's targets for old growth forest are too low. Old growth targets were identified comparably to how wildlife habitat targets were set - the minimum acceptable amount for the DFFC was identified as 20% below the minimum recorded at any time during the SFMM benchmark run. As Table 8 shows, this amount was extremely low for almost all the forest units. (Note that, as discussed below, the plan

¹⁵ Ontario Ministry of Natural Resources. 2003. Old Growth Policy for Ontario's Crown Forests. Version 1. Ontario Ministry of Natural Resources, Peterborough, ON

¹⁶ Ontario Ministry of Natural Resources. 2003. Old Growth Forest Definitions for Ontario. Ontario Ministry of Natural Resources, Peterborough, ON.

exceeded the minimum acceptable amounts for all forest units, but the audit team believes the amounts achieved may be too low).

Table 8. Old growth amounts (ha) predicted to be on the forest in the SFMM benchmark run and the minimum acceptable amount of old growth used in the 2004 FMP, based on the benchmark run.

Forest Unit	Old Growth onset age (yrs)	Forest Unit area in Benchmark Run (ha) ^a	Minimum Acceptable Old Growth Area (ha) ^b	Minimum Acceptable Area as a Percent of Total Forest Unit Area
Spruce Lowland	161	84,505	147	0.17%
Spruce Upland	126	300,780	3,096	1.03%
Jack Pine 1	101	221,379	1,735	0.78%
Balsam Fir 1	81	3,643	9	0.25%
Other Conifer 1	126	9,702	521	5.37%
Red Pine 1	131	876	18	2.05%
White Pine 1	151	557	77	13.8%
Poplar 1	101	25,319	28	0.11%
White Birch 1	81	3,194	1	0.03%
Mixed Conifer 1	101	133,850	2,088	1.56%
Mixed Conifer 2	111	28,531	85	0.29%
Mixed Hardwood 1	101	29,771	198	0.67%
Other Hardwood 1	101	110	7	6.36%

^a - from table FMP-12

^b - from Table FMP-13

Table 8 shows that minimum acceptable old growth areas in the plan are less than 1.0% for several forest units. We believe that this is a function of the manner in which targets were set. The SFMM benchmark run starts with the current (2004) forest condition and predicts the future state of the forest in the absence of fire suppression and timber management. The current forest condition is, therefore, an important consideration. As shown in Figure 2, the age class distribution of the forest is skewed and has been affected by past management practices. For example, of the approximately 203,000 ha of the Jack Pine 1 forest unit on the Forest at present, only about 2,150 ha, or just over 1% is at, or above the old-growth onset age of 101 years. Because the minimum acceptable is set at 20% below the lowest value that occurs over the course of the SFMM benchmark run, an "unnatural" amount of old growth is identified as an acceptable target, and the present abnormal age class distribution is perpetuated.

The province's old growth policy identifies the requirement to set old growth targets for Forest Management Units, but does not provide direction on how this is to be done. A subsequent FMP Note¹⁷ deals with this requirement as follows: "Quantitative targets will be derived from SFMM's natural benchmark run(s), historic and current forest conditions, and socio-economic considerations" and "The results of the SFMM natural benchmark run(s) provide an age class distribution and quantity of old growth condition. This information will be used to develop old growth targets for the management unit given the

¹⁷ Ontario Ministry of Natural Resources. 2003. FMP Notes – Old Growth. Number 1.

following considerations:

- the gap between existing old growth condition and projected old growth condition;
- the comparison of current and future forest conditions with historic forest conditions;
- the rate at which restoration strategies (if any) may proceed;
- any forest unit or ecosite age class gaps restricting the supply of old growth condition; and
- other ecological, social and economic values..."

Although the FMP Note does not come into effect until 2006 (so the 2004 plan was not required to follow its requirements), its direction is not sufficient to guard against inappropriate targets being set. We have identified a recommendation directed at corporate MNR to provide more explicit direction on old growth target setting.

Recommendation # 6

Corporate MNR should provide more definitive direction on acceptable means of setting old growth targets than is presently provided in the Old Growth FMP Note.

The present plan exceeds the old growth minimum targets for all forest units. However, because the targets are so low, it is still relevant to examine whether the projected old growth achievements are ecologically appropriate. Figure 5 shows the projected trend in old growth area and proportion of the total forest projected to be in old growth at 20-year intervals by the SFMM run of the selected management alternative. The figure shows that after reaching a peak of approximately 48,000 ha (5.7% of the Forest) in 2024, the area in old growth is projected to decline to approximately 29,000 ha (3.5% of the Forest) by the year of the DFFC (2084). We believe these levels of old growth on the forest may be too low to meet the direction of the old growth policy that "representative" amounts of old forest be maintained. The levels projected to be attained are low relative to contemporary thinking on old growth in boreal forests.

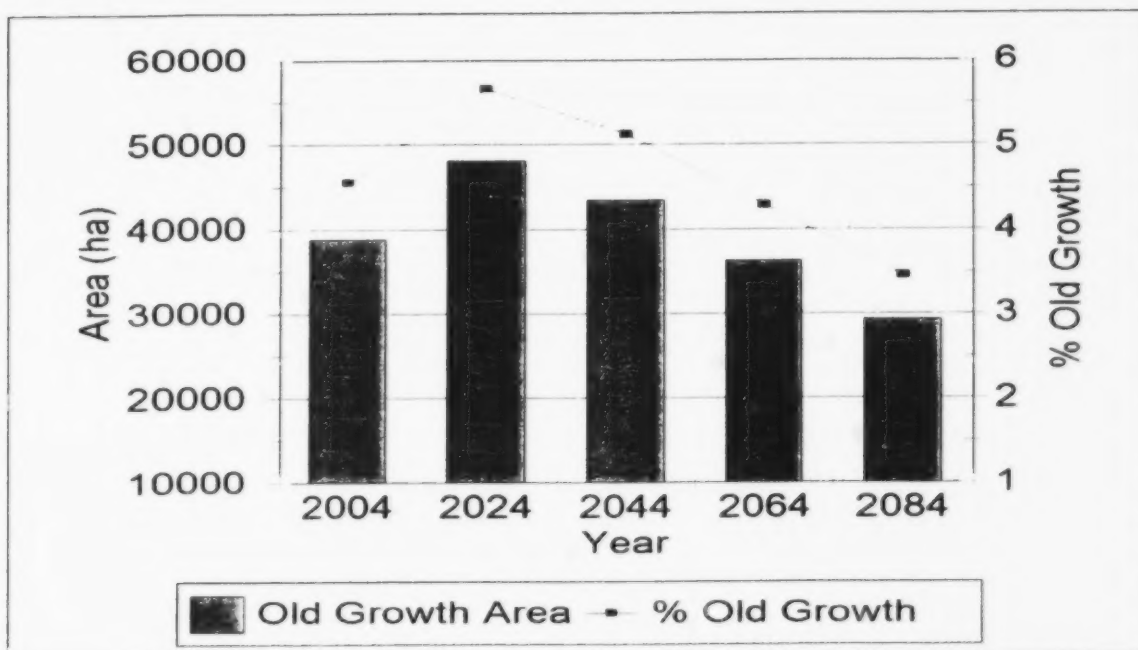


Figure 5. Projected old growth area and percent of the total forest area in old growth. (Source 2004 FMP, Table FMP-12)

Clearly, the first step in coming to grips with the level of old growth on the forest, is to identify ecologically meaningful targets, so that the discussion on achieved levels has a good basis for comparison.

Recommendation # 7

The Planning Team for the 2009 FMP should use a more appropriate means of setting old growth targets than was used in the 2004 FMP.

Woodland Caribou and Marten

Woodland caribou are very sensitive to human disturbance and their range in Ontario has receded northward with the settlement of the province. Caribou once ranged south to Lake Nipissing, but are now restricted to much more northern forested parts of the province. The decline of caribou was likely due to a combination of factors including hunting, fire, land clearing, predation and logging.¹⁸ As noted earlier, about one-third of the English River Forest is north of the "caribou line", and so is managed using the provincial caribou guidelines. The guidelines provide direction on how broad forest areas should be managed so as to maintain their caribou populations. Key components of the guidelines include:

- management of forest landscapes on a very large spatial scale and a temporal scale spanning 100 years or more;
- management for the continuous provision of mature coniferous habitat in large

¹⁸ Darby, W.R., H.R. Timmermann, J.B. Snider, K.F. Abraham, R.A. Stefanski, C.A. Johnson. 1989. Woodland Caribou in Ontario. Background to a policy. Ontario ministry of Natural Resources. Queen's Printer for Ontario. Toronto.

(10,000 ha or greater) tracts;

- management of access roads so as to minimize impact on caribou habitat; and
- protection of calving areas.

The main wildlife habitat guidance for the portion of the forest south of the caribou line was provided by the marten guidelines. Among other requirements, the marten guidelines require the provision of large contiguous areas (3,000-5,000 ha) of habitat through the maintenance of 10-20% of the forest which has the capability of producing marten, in suitable conditions (i.e. generally conifer-dominated old stands). The 2004 FMP adopted this requirement of the guidelines as its target for marten habitat.

The current lack of unfragmented, suitable mature forest did not leave room for the planning team to explore many options. As noted earlier, resolution of issues regarding caribou and marten habitat were the sources of much tension on the planning team. The Summary of Major Issues Encountered provided as an appendix to the FMP notes "Long-term wildlife habitat deferral areas for marten and woodland caribou were a major issue in the development of this forest management plan and resulted in a significant disagreement among planning team members. Some planning team members considered the deferral areas to be excessive, while others considered them to be appropriate." Appendix 27 of the plan¹⁹, which was written by MNR staff, also portrays the tension on the planning team: "...the basic premise of wildlife habitat retention was consistently disputed by Bowater. As a result it wasn't possible to examine the potential for additional management actions during this plan". While the MNR author's frustration is evident in this quote, Company personnel presented a similar level of frustration at what they characterized as intransigence on the part of MNR members on the planning team to consider their perspectives on wood supply management. It is evident to the audit team that both parties were sincere in their beliefs and perceived there to be a heavy cost to compromising.

A detailed analysis of the caribou mosaic is beyond the scope of this audit, given the time and resources available. However we note that it is apparent that thoughtful resolutions seem to have been made to some of the issues identified in the caribou habitat appendix to the plan (such as the protection of currently used critical habitat), while other issues (i.e. how to deal with the legacy of past management which has provided for a low amount of habitat) remained unresolved. The audit team supports the appendix's recommendations that "future considerations when managing caribou and caribou habitat on this forest should include: potential for prescribed burning or thinning in providing future caribou habitat, planning to remove larger areas of residual hardwood from past forestry practices, more emphasis on road rehabilitation, and no further reduction in currently used caribou habitat." These notions are embodied in Recommendation # 9 which directs the MNR and Company to develop a long-term habitat strategy for the provision of caribou and marten habitat.

MNR staff in Ignace have collected data which provide good evidence of caribou inhabiting areas south of the caribou line. MNR has not identified a corporate approach as to how to deal with such situations, other than to acknowledge that the Class EA and FMPM require them to accommodate the habitat needs of species at risk. On the English River Forest, the planning team was able to identify marten cores abutting the

¹⁹ Elder, D.R. 2004. Strategy for the management of woodland caribou on the English River Forest. English River Forest 2004-2024 FMP.

caribou line to the south as a means of providing habitat protection for caribou in key areas, however this measure may not be tenable in the long run. The intent of the caribou line is to provide consistent management and good caribou habitat management north of the line, however caribou populations or subpopulations south of the line should not be relegated to less-considerate management approaches. The audit team believes there is a need for corporate management to articulate a consistent approach to dealing with such circumstances. Given that the species is recognized under COSEWIC, a more meaningful objective would be to work towards habitat improvement. The present FMP (Table FMP-5) predicts a decline in caribou winter habitat of more than 20% at the time of the Desired Future Forest Condition, calling the sufficiency of present management somewhat into question.

Recommendation # 8

Corporate MNR should develop a strategy for dealing with the integration of caribou habitat requirements and forest management in instances where caribou are present south of the caribou line.

The process of coming to a resolution on marten core areas on the forest was also very tension-filled. Eventually a series of cores were identified through the creation of deferral areas extending 60 years into the future. Appendix 28 to the FMP²⁰ identifies the cores and provides summary statistics. The appendix provides data on core areas for the whole forest, and for the portion of the forest south of the caribou line. For the whole forest, the percent of capable area in core habitat declines from 12.3% in the period 0-20 years in the future, to 8.7% 40-60 years in the future. For the area of the forest south of the caribou line, the capable area in core habitat declines from 9.5% in the period 0-20 years in the future to 7.0%, 40-60 years in the future. MNR staff presented an argument that the requirements of the marten guide and the 2004 FMP's objective have not been fully met because the area south of the caribou line does not achieve the 10-20% target level, and because the percent capable area in cores for the whole forest is projected to fall below the target level during the period 40-60 years in the future. The FMP identified the target of 10-20% "where marten is the featured species on the forest" and noted that marten is featured species on the entire English River Forest. This provides support for considering the forest as a whole, not just the area south of the caribou line as a basis for assessing whether the target is achieved. However, the plan also states that the core areas should be spatially well-distributed. An argument could be made that the lower representation of cores in the area south of the caribou line indicates that the target is not met.

While a case either way can be made, the difficult process of developing the core areas and the lack of agreement on the degree to which the plan's targets are met highlight the need to develop better strategies for the integration of forest and wildlife management on the forest.

The audit team believes that, given the nature of the English River Forest, and the poor track record of the Company and MNR in working collaboratively in the forest management planning process, there is a need for an effort external to the prescribed processes of forest management planning to address the integration of caribou and

²⁰ Elder, D.R. 2004. Marten core area strategy and statistics for the English River Forest. English River Forest 2004-2024 Forest Management Plan.

marten management with timber management on the English River Forest. Therefore, a recommendation is made to form a task team with the mandate of providing strategic and tactical direction on the integration of wildlife and forest management. The intent of such a group would not be merely to meet the requirements of the MNR's wildlife guides and get through the next FMP, but to identify long-term strategies for integrating wildlife and forest management on the Unit which will, hopefully, help avoid the antagonistic experience of the development of the 2004 FMP. It would likely be helpful if membership on the task team drew in individuals not only from the MNR Dryden district and Bowater, so that new perspectives could be brought to the issues, unburdened by the history of the development of the 2004 FMP.

Recommendation # 9

As soon as possible, the MNR and Company should form a task team with the mandate of providing strategic and tactical direction on the long-term integration of caribou and marten habitat with timber management on the English River Forest. Membership on the task team should be broader than MNR Dryden district staff and Bowater personnel.

Access

The 2004 FMP contains plans to construct only a small amount of new main roads. According to Table FMP-26, no primary road is to be constructed and only 49 km of secondary road are scheduled for construction. The Company's main strategic activity regarding roads has been to initiate a "Core Roads Program". Through this program, implemented under the Company's EMS, key strategic primary and secondary roads for the Company's use have been identified. Maintenance activities are targeted at these roads as a means of maximizing the effectiveness of the Company's road maintenance expenditures.

Two recommendations from the most recent audit of the Brightsand Forest identified the need for the Company and MNR to address issues related to access on the Forest. Recommendation #8 directed the Company and the MNR to resolve liability and maintenance responsibility for all primary and secondary forest access roads on the Brightsand Forest; and Recommendation #17 directed the Company to work with MNR and local stakeholders in the development of a strategic roads action plan.

A key corporate MNR activity related to these recommendations has been the work of the Forest Roads and Water Crossings Initiative²¹ (FRWI). The task team report produced as a result of the initiative is very thoughtful and presents a series of mechanisms to resolve ownership questions and maintenance responsibilities. The action plan for the 1999 Brightsand audit indicated that "Bowater and local MNR will utilize this direction [i.e. the report of the FRWI] to appropriately partition responsibility for the road network on the Brightsand Forest within 3 months of receiving the provincial instructions. The report was released in October, 2003, leaving almost two years after its release and the time of this audit's site visits to make headway on the issues. It was not apparent to the audit team that meaningful progress had been made to date. The MNR and Company noted that it is their expectation that ownership issues (and therefore maintenance responsibilities) will be resolved during the course of the 2004 FMP,

²¹ Forest Roads and Water Crossings Task Team. 2003. Forest Roads and Water Crossings Initiative Task Team Report. Ontario Ministry of Natural Resources.

through implementation of processes identified in the FRWI report.

The audit team has no doubts that the Ministry and the Company intend to resolve ownership and liability issues in the course of this plan period. Nonetheless, to ensure this issue remains a priority on the forest, we have identified the need in a recommendation.

Recommendation # 10

The MNR and Company should resolve ownership and maintenance responsibilities for all roads and water crossings on the English River Forest.

3.3.8 Plan Review, Approval, Contingency Plans and Amendments

As noted earlier, when it became apparent that the preparation of the 2004-2024 FMP would not meet the deadline required to provide for uninterrupted management of the Forest, a decision was made to prepare a Contingency Forest Management Plan (CFMP). The contingency plan also served as the annual work schedule for the 2004-05 period. The English River Forest was managed for almost one year under the Contingency Plan prior to the FMP coming into effect.

This section discusses the development, review and approval of the 2004-2024 FMP and the 2004-05 CFMP, as well as the issue resolution and FMP amendments during the audit period.

3.3.8.1 2004-2024 English River FMP

The approved Terms of Reference (TOR) outlined a detailed timeline for the plan production, review and approval according to the FMPM requirements; however this timeline was not met. Reasons for the delay are described later in this Section, and in Section 3.3.1.

The public consultation for the English River 2004-2024 FMP consisted of five formal opportunities as outlined in the FMPM. These were the invitation to participate, first information centre, second information centre, draft plan review, and MNR approved plan inspection. The public consultation schedule implemented, compared to the consultation planned in the terms of reference is provided in Table 9. As noted in Section 3.2.3, a separate native consultation was not conducted for Saugeen First Nation, Wabigoon Lake Ojibway Nation, or Lac de Mille Lacs First Nation as these communities did not elect to have this separate process.

Delays in the planning process first occurred in the public consultation component related to the first information centre, which was scheduled for October 1st and 2nd, 2002, but was not held until November 13th and 14th, 2002 owing to delays in resolving issues related to the planning inventory, marten cores and caribou mosaic.

The second information centre was scheduled for January 29 and 30, 2003, and was initially re-scheduled for March 26 and 27, 2003. However, the second information centre was delayed; and was eventually held on October 8 and 9, 2003, 8.5 months later

than originally planned. The delay was due to continued difficulties in finalizing the planning inventory, marten cores and caribou mosaic.

MNR staff noted issues related to the modelling conducted prior to 1st and 2nd open houses:

- There was no opportunity for MNR staff to review the model results going into the 1st open house; and
- There was insufficient opportunity for staff to review model revisions prior to the 2nd open house.

These were obviously highly undesirable circumstances, particularly as MNR staff were not in agreement with the modelling results and information presented. Company staff presented a somewhat different perspective on the events, noting that MNR staff did have an opportunity to have input into modelling, but acknowledged that there were communication problems.

Table 9. Comparison of the planned vs. implemented schedule for public consultation for the 2004 FMP. (Sources: Final plan summary and Terms of Reference)

Public Consultation Stage	ToR Schedule	Date Completed	Delays/Comments
1) Invitation to Participate			
invite out	18-Feb-02	20-Feb-02	
EBR Registry	25-Feb-02	25-Feb-02	
native response for separate native consultation	18-Apr-02	na	no separate native consultation
2) First Information Centre			
30 day advance public notice	29-Aug-02	09-Oct-02	
information centre	1,2-Oct-02	13,14-Nov-02	delayed six weeks
60 day public response	02-Dec-02	13-Jan-03	
3) Second Information Centre			
30 day advance public notice	29-Jan-03	03-Sept-03	
information centre	29,30-Jan-03	8,9-Oct-03	delayed 8.5 months
native consultation forum	30-Jan-03	na	
60 day public response	01-Apr-03	09-Dec-03	
4) Draft Plan Review and Issue Resolution			
draft submission	17-Jun-03	01-Jan-04	delayed 6.5 months
notice of draft plan review	17-Jul-03	28-Jan-04	
EBR Registry	17-Jul-03	28-Jan-04	
optional information centre	na	02-Mar-04	
offer of separate native consultation	na	na	
MNR preliminary alterations	17-Jul-03	01-Mar-04	
60 day public review response	18-Aug-03	02-May-04	
final required alterations	17-Nov-03	11-May-04	
5) Plan Approval			
final plan submission	10-Dec-03	04-Jan-05	delay 1yr 3 weeks
15 day MNR final review	07-Jan-04	18-Jan-05	
MNR approval of plan	07-Jan-04	07-Feb-05	delay 1yr 1 month
notice of plan inspection	09-Jan-04	09-Feb-05	
EBR Registry	09-Jan-04	09-Feb-05	
30 day approved plan inspection period	07-Feb-04	10-Mar-05	
45 day bump-up review period ends, MOEE decision	24-Mar-04	na	
operations commence	01-Apr-04	01-Apr-05	delay 1yr

Following the second information centre, it was decided that the "review and approval" of the 2004-2024 FMP would be delayed, which would necessitate the development of a contingency plan to bridge operations between the expiry of the 1999 Brightsand Forest FMP (expiring on March 31, 2004), and the 2000 FMP for the former English River FMP (expiring on March 31, 2005).

The planning team minutes indicated the planning team had identified the need for more support to stay on schedule as early as September 5, 2002. The steering committee met on May 12, 2003 and the planning team met on May 20, 2003 to discuss the need and content for a contingency plan due to "a delay in plan preparation". They identified the need for a contingency plan for the Brightsand Forest using the 1999-2019 FMP as strategic direction.

One possibility would have been to develop a contingency plan just for the Brightsand Forest, as the 2000 FMP for the former English River Forest did not expire until March 31, 2005. However the Company was expressing concerns that there were not sufficient economically available allocations for its 5th year of operations (i.e. although the allocated area existed, it occurred in scattered and isolated areas without access), so a decision was made to include the whole (present) English River Forest in the Contingency Plan. The Steering Committee noted that the contingency plan should be made up of non-contentious areas, which were later defined by the planning team as areas that did not have any unresolved public comment.

3.3.8.2 2004-05 Contingency FMP/AWS

Table 10 provides a summary of the 2004-05 contingency FMP/AWS development and approval.

The FMPM notes that development of a contingency plan is a two step process. The first step is the development of a contingency plan proposal which is to be submitted to the Ministry of Environment and Energy (FMPM, page A-202), and the second step is the development of the plan itself. The FMPM describes two broad types of circumstances which may necessitate the development of a contingency plan: 1) delay in plan preparation and 2) delay in plan approval. The FMPM notes that "In situations where there is a delay in plan preparation of the forest management plan, a greater planning effort is required as compared to situations where there is a delay in forest management plan approval. In the latter case, much of the planning of operations will already have been completed in the preparation of the draft forest management plan. Where possible the contingency plan will include operations which have been planned in the current approved forest management plan, but which will not be carried out before the end of the plan term (e.g., contingency areas)." (FMPM, page A-201)

The contingency plan proposal for the English River Forest was submitted on October 30, 2003, approved by MNR on November 14 and endorsed by MOEE on December 4. Bowater submitted a draft contingency plan on December 30, 2003, and MNR completed its review on January 30, 2004. The rationale used to justify the need for the contingency plan was a delay in plan approval.

The audit team has several concerns with the justification of the contingency plan, its content and the process used in its approval. These are described in detail below.

Classification of the Contingency Plan

The audit team believes that the requirement to undertake a contingency plan should have been classified as a "delay in plan preparation" rather than a "delay in plan approval". Although the draft FMP was submitted at about the same time that the contingency plan was submitted (contingency plan submitted Dec. 30, 2003, draft FMP submitted Jan. 1, 2004 – as per the contingency plan proposal), and thereby appearing to be consistent with the classification of delay in plan approval, there is evidence that a more accurate reason was that the draft FMP was not adequately prepared. This evidence includes;

- It took one year for the FMP to be approved after it was initially submitted. Such a long period of time is indicative of a plan in an unrefined state when initially submitted. Company staff stated that they were working diligently and consistently to address the review comments and other aspects of plan revision during the period between submission and approval;
- Planning team minutes from 2002 and 2003 indicate that plan preparation was behind schedule and contained discussions of the possible need to develop a contingency plan for this reason;
- The explanation provided for the need to develop the contingency plan in the contingency plan proposal was a delay in the planning inventory, which would appear to be a delay in plan preparation as opposed to a delay in plan review and approval; and
- The draft FMP had not been submitted at the time the contingency plan proposal citing a delay in plan approval, was submitted and approved.

MNR District staff provided evidence that their preference at the time of preparation of the contingency plan proposal was to acknowledge that a delay in plan preparation was the reason a contingency plan was needed. MNR Regional office provided ultimate direction on this decision, however. Finally, we note that the draft FMP was submitted 6½ months later than originally scheduled. To base the need for the contingency plan on a delay in plan approval, rather than a delay in plan preparation is counterintuitive to the timing of events related to draft plan preparation and submission.

Although the difference between the two justifications for a contingency plan discussed above may seem semantic, there is more to it. The FMP states that for contingency plans based upon delays in approval, operations for the contingency period should incorporate non-contentious operations from the draft FMP (page A-203). Alternately if the reason is a delay in plan preparation, "planning of operations will be ... consistent with the management objectives and strategies of the current approved forest management plan". Local MNR staff logically interpreted this to mean that a delay in plan preparation would require that contingency operations be based on the operations planned in the current approved (i.e. 2000) FMP.

Therefore, by basing the contingency plan on a delay in plan approval, it became possible to access operations areas identified in the new plan, as opposed to relying on those from the current plan. As noted above, and discussed in more detail in Section 3.4.2, the Company had exhausted the supply of economically accessible wood prior to the end of the five-year term for the 2000 English River Plan. Having access to wood allocated in the draft 2004 FMP would allow the Company to forgo harvesting this difficult-to-access wood. In addition, the audit team is concerned that accessing 2004 FMP harvest areas, rather than using the remaining 2000 FMP harvest areas has

implications for the sustainability of the forest, as is discussed more in Section 3.4.2.

This perspective is validated by planning team minutes. The May 2003 planning team minutes state that there was not enough economically accessible wood left in the fifth year of the English River 2000 FMP allocations (i.e. 2004-05) to allow for the use of the 2004-05 AWS as the contingency plan for the English River Forest. This information was corroborated through interviews with Bowater and MNR staff.

Incomplete Contingency Plan Approved

The contingency plan was approved on March 16, 2004 but the required alterations were not addressed to the satisfaction of MNR until the seventh submission was approved on June 11, 2004. Therefore, operations were implemented for 2.5 months (i.e. April, May and part of June 2004) before all required alterations were completed. The approved contingency plan did not contain many operations which were subsequently carried out. By virtue of the fact that significant amendments were incorporated into the contingency plan shortly after it was approved (discussed below), the audit team believes that the Company and the MNR knew that the plan which was being approved did not accurately reflect the management intentions for the forest.

The fact that the contingency plan was incomplete when approved and when operations began is highlighted by the approval page addendum, which included the following statement signed by the District Manager:

"I recommend that this contingency plan be approved as submitted, except for specific items that have been identified as deletions on the plans maps, tables, text and supplementary documentation. These items were removed prior to my recommendation for approval of this Contingency Plan. My recommendation for approval of this contingency plan is consistent with the approved contingency plan proposal as endorsed by Ministry of Environment on December 4, 2003".

Contentious harvest areas were removed from the approved Contingency Plan using the above approval page addendum and by manually crossing out all contentious blocks on the operations maps. This meant that all tables, stand lists and associated text presented to the public after approval were incorrect. It is difficult for the auditors to see how the public could clearly discern what was and was not approved in the contingency FMP. The audit team is similarly concerned that the public did not have a chance to review the final product since it was not available during their final review period.

Interviews with Bowater and MNR planning team members also indicated the contingency plan was approved with the intention of amending in harvest areas at a later date to make up for an apparent under-allocation which resulted from the removal of the contentious blocks. This necessitated three large minor amendments (i.e. #8, #10, and #15) and two very large administrative (i.e. # 1 and #22) amendments within five months of approval.

As noted previously, the draft contingency plan was submitted on Dec. 30, 2003. The Company submitted a revised contingency plan on March 1, 2004 in response to MNR's required alterations. However, the plan was not approved at that time as corrections were required and re-submissions occurred on March 18, 2004, March 28, 2004, April 14, 2004, April 23, 2004, and June 11, 2004. Therefore, Bowater made seven partial or complete submissions of the 2004-05 Contingency FMPAWS, before it was finalized.

Five of the submissions occurred after the plan was approved. Initial submissions included contentious areas that had to be dropped according to the contingency plan proposal, while the later submissions were to complete the outstanding required alterations and address the fact that "Woodlands The System" did not provide the link necessary to provide silviculture prescriptions for all stands.

The audit team believes that the MNR's actions of approving the Contingency Plan with full knowledge that it did not represent intended operations on the forest was not in keeping with its role as overseer of the planning process and steward of Ontario's Crown forests.

Staff from MNR indicated that the main reasons that seven iterations of the plan were required were that the first three or four Bowater submissions included contentious blocks contrary to the contingency plan proposal and as agreed between Bowater and MNR. MNR defined the contentious blocks as any blocks that had received unresolved public comment (e.g. Ignace Town watershed).

Bowater staff indicated that the contingency plan took seven iterations to finalize for several reasons, including that the definition of "contentious block" changed over the course of the iterations, and that MNR did not remove all contentious areas initially. This perspective is significantly different from that of MNR staff who noted a consistent interpretation of "contentious" on their organization's part, and inconsistency in terms of the company's approach to adding and removing harvest blocks during the review process.

The audit team also believes that the contingency plan's link to the FMP was weak by virtue of the fact that the contingency plan did not contain plan objectives or an assessment of sustainability. The main link was in the fact that the operations proposed in the contingency plan were included in the draft 2004-2024 FMP. At the very least, the auditors suggest that the 2004-2024 draft plan objectives, analysis of management alternatives, and sustainability assessment should have been referenced and a comparison of the planned harvest areas to the one-year and five-year available harvest area should have been completed to set the context and planning direction for the 2004-05 contingency plan. Similarly it is reasonable to expect that the amendments to the plan should have discussed sustainability of the forest given the fact that the approved harvest area in the contingency plan, (after the amendments) exceeded, by about 50%, one year's allocation as identified in the draft 2004 FMP.

Public Review of Contingency Plan

The 15-day public review period of the draft contingency plan occurred between Feb. 2 and Feb. 17, 2004. The public review period was preceded by ads in Ignace and Thunder Bay newspapers on Jan 28, 2004. This meant that only 4 days of advance notice were provided prior to the public review period of the draft contingency plan. MNR staff point out that the FMPM (page 203) provides a level of discretion in public notices for contingency plans by use of the phrase "with whatever modifications are necessary". Nonetheless, the audit team believes that providing only 4 days notice is too little and is beyond the intended flexibility provided in the FMPM.

The ad for the public inspection of the approved 2004-05 contingency plan/annual work schedule used an approved AWS inspection ad format and it met the AWS public notice requirements of page B-28 and B-29 of the 1996 FMPM. Since this was a contingency

FMP as well as an AWS, the audit team believes that contingency plan notice requirements on page A-204 of the 1996 FMPM should have also been applied. In that regard, the ad was deficient in several aspects of the requirements identified on page A-204 of the 1996 FMPM. The ad was weak in "c) a description of the subject matter of the contingency plan", as it did not describe the context, the fact that it was also an AWS, nor the type and level of operations being proposed or the implementation period. The notice also failed to mention:

"d) the particulars and schedule of any additional formal public consultation opportunities", namely the review and approval of the 2004-2024 FMP which provided the objectives, sustainability assessment, available harvest area, and silviculture ground rules that apply to the contingency plan;

"h) a brief explanation of how comments received will be handled under relevant provisions of the Freedom of Information and Protection to Privacy Act", and

"i) a statement of the relevant opportunities for resolution of issues".

MNR staff point out that the section of the FMPM related to contingency planning provides the planning team with discretion about the content and of ads by using the words "Normally will contain", rather than "must contain", which is used in reference to FMP ads. While this is true, it is not apparent to the auditors what the rationale was for omitting the items, or how their omission served the interests of the public.

Contingency Plan Schedule

The original contingency plan was somewhat unclear regarding its likely duration. The proposal clearly indicates that the plan is for the one-year period April 1, 2005 to March 31, 2005. However, the proposal also states that "it is anticipated that the English River Forest 2004-2024 Forest Management Plan will be approved on or about July 3, 2004, with implementation commencing after completion of the public inspection of the approved FMP. As the company notes, this meant that it was anticipated that the Contingency plan would be required until approximately August 3, 2004. However, the 2004 FMP was not actually approved until February, 2005. Although not a major point in the greater scheme of things, the fact that the anticipated date of approval was off by about 7 months is another indicator that the draft plan was likely not a refined document when submitted. Table 10 provides a detailed break-down of the planned and implemented schedule for related the development and approval of the contingency plan.

Table 10. Comparison of the planned vs. implemented schedule for development, approval, and refinement of the 2004 Contingency Plan. (Sources: 2004 Contingency Plan Final plan summary and Terms of Reference)

Public Consultation Stage	Proposed Conting. Schedule	Actual Schedule	Comments
1) Contingency Plan Proposal			
Proposal Submitted to MNR	30-Oct-03	30-Oct-03	
MNR Approved	14-Nov-03	14-Nov-03	
Submitted to MOEE	17-Nov-03	17-Nov-03	
MOEE Approved	04-Dec-03	04-Dec-03	
2) 2004-05 Contingency FMP/AWS			
Prepare and Submit Contingency FMP	01-Jan-04	30-Dec-03	
MNR Review Complete	02-Feb-04	30-Jan-04	
15 day Public Review of Contingency FMP	2-Feb-04 to 17-Feb-04	2-Feb-04 to 17-Feb-04	
Final List Required Alterations	17-Feb-04	17-Feb-04	
Final Contingency Plan Submitted	01-Mar-04	01-Mar-04	copy sent to Sault Ste. Marie
MNR Final Approval	15-Mar-04	16-Mar-04	
15 day Public Inspection	15-Mar-04 to 30-Mar-04	16-Mar-04 to 31-Mar-04	
Correction #1 to Final Submission	na	18-Mar-04	included contentious blocks
Correction #2 to Final Submission	na	28-Mar-04	included contentious blocks
Partial Correction #3 to Final Submission	na	14-Apr-04	
Final Correction #4 Final Submission	na	23-Apr-04	two pages alts, FOPs based on Woodlands project #, no link to stand #, MNR review complete May 5, 2004
Final Correction #5 Final Submission		11-Jun-04	still missing items, some address amendment, 14 deficiencies including no AWS tables and text, missing silv and harvest stand listings, MNR review complete June 21, 2004.
2004-05 Conting FMP Ops Commence	01-Apr-04	01-Apr-04	
3) 2004-2024 FMP			
Approval of 2004-24 FMP	03-Jul-04	07-Feb-05	

In sum, the audit team finds that the contingency planning process, and the plan itself, had several serious flaws. Chief among these is the fact that the rationale for the contingency plan was not accurate and this in turn provided access to the more desirable wood identified in the 2004 Draft FMP on the English River portion of the forest sooner than would have been the case if the 2000 FMP was in effect or if the more accurate rationale (in the opinion of the audit team) for the need for the contingency plan was recognized. In addition, the contingency plan was essentially an incomplete document when it was approved by the MNR. The operations included in the plan upon approval were apparently not those actually intended, as is evident by the fact that several large amendments were incorporated into the plan shortly after it was approved. The overall impression of the audit team is that the contingency plan was not treated with an appropriate level of importance by the Company, given that it was intended to guide management of the forest for the period in which it was in force. Just as

importantly, the MNR facilitated this behaviour by agreeing to classify the reason for the contingency plan as being a delay in plan approval, and approving an incomplete version of the plan.

3.3.8.3 Completion of 2004-2024 FMP

As noted in Table 9, the original draft 2004-2024 FMP was submitted on January 1, 2004, 6.5 months beyond the initially-scheduled submission date. MNR completed its review and provided a list of required alterations on March 1, 2004. An optional information centre was held on March 2, 2004, followed by a 60-day public review period ending on May 2, 2004. The final required alterations resulting from the MNR and public reviews were provided to Bowater around May 11, 2004. These final alterations were not fully addressed for eight months until January 4, 2005 when Bowater submitted the final plan for approval. The FMPM indicates that "A period of 30 days is provided for the plan author to make the necessary revisions to the draft plan" The fact that the revisions took so long to address is not indicative of the Company's inactivity in addressing the requirements, but moreso a reflection of the nature of the required alterations, differences between the Company and MNR positions on strategic issues associated with the plan (e.g. marten cores) and a reflection on the quality of the draft plan when submitted. The final plan submission was delayed by 1 year and 3 weeks over the original terms of reference schedule and was six months beyond the July 3, 2004 expected approval noted in the MNR-approved and MOEE-endorsed contingency plan proposal.

In the fall of 2004, well after the MNR provided its list of required alterations, MNR planning team members provided input to MNR managers regarding the most recently-received version of the plan's management alternatives. All three MNR members of the planning team did not support approving the selected management alternative (SMA) in the plan. Reasons given for this lack of support by the MNR planning team members in a presentation to MNR managers included:

- It was very difficult for MNR staff to ensure they understood the entire scope of the model due to inadequate time for a thorough review and uncertainty due to the changes that were made to the model without complete documentation;
- The proposed SMA exceeded the plan's conifer wood supply objective of 925,000 m³/yr, and there were insufficient efforts made to balance this high wood supply with the marten cores and caribou habitat; and
- The proposed SMA target of 1,060,000 m³/yr "can only be met for the first 5 year term and is unsustainable in every subsequent term".

The 2004 FMP was approved by the MNR with the Company's proposed SMA even though all three MNR members of the Planning Team expressed opinions ranging from hesitation to explicit advice not to approve the SMA in the plan. MNR approval for FMPs is the responsibility of District Managers and Regional Managers, not its planning team members, and so, while it is consistent with the responsibilities of MNR managers to make approval decisions, the Audit Team finds it disconcerting that such a course of events would occur. This suggests that MNR management may not have had faith in their representatives on the planning team, or more likely that MNR managers felt the pressure of timing in the planning process and approval of the plan was seen in a risk-management context, in which expediency was a key factor in decision-making.

Nonetheless, management approval of a plan for which sustainability concerns had been raised sends a strong negative message to the MNR staff and is seen by the audit team as yet another failing of the planning process as executed for the English River Forest.

In consideration of the above planning issues, the audit has identified a set of recommendations, several of which direct the planning team for the next FMP not to repeat the same practices and errors as occurred in the development of the 2004 Contingency Plan and FMP. The audit team also believes that there may be a role for corporate MNR in being involved in the review and approval of contingency plans. The audit team believes that direction in the FMPM (both 1996 and 2004 versions) provides reasonable discretion for planning teams with regard to contingency plans. Some discretion is necessary as there are a wide variety of circumstances which may necessitate a contingency plan being developed. However, the audit team is concerned that the discretion provided by the FMPM was not implemented in a manner consistent with the intention of maintaining a transparent and rigorous planning process. For this reason, the audit team has identified Suggestion # 3

Suggestion # 3

Corporate MNR should consider developing a role for itself in the review and approval of Contingency Plans and Contingency Plan proposals.

Recommendation # 11

The MNR should not accept or review incomplete or inaccurate FMPs or Contingency Plans.

Recommendation # 12

The MNR should not approve incomplete FMPs or CFMPs. Conditional approval should be avoided as there are no provisions for it in the FMPM. Formal approval should only be given once all required alterations and all documentation requirements have been satisfied.

Recommendation # 13

Future planning teams should ensure that contingency plans provide clear linkages to sustainability assessments and plan objectives that direct their operations.

Recommendation # 14

Future planning teams should ensure that adequate notice is provided prior to all stages of planning in which the public has opportunities to review planning-related products.

Issue Resolution and Bump-up Requests

The FMPM outlines an issue resolution procedure through which members of the public

can request to have unresolved issues addressed first by the planning team and plan author, then by the district manager, and finally by the regional director. The FMPM also outlines bump-up procedures through which members of the public who are dissatisfied with specific aspects of a forest management plan and/or the results of an issue resolution process can request a Ministry of Environment and Energy (MOEE) review of the plan component and an MOEE decision on whether or not an individual environmental assessment is warranted.

There were no bump-up requests associated with the 2004 English River FMP. Two issues in the 2004-24 FMP were successfully resolved through the issue resolution process. One involved a trapper's concern with harvesting on his trapline, and the other concerned a tourism outfitter's concerns regarding the creation of access to a lake. In both of these cases, the appropriate process was followed through to the successful resolution of the issues.

FMP Amendments

The following numbered sections provide assessments of the amendments to the FMPs during the audit period.

1) 1999-2019 Brightsand FMP

For the 1999 Brightsand FMP, there were a total of 22 amendment requests with 20 approved as administrative amendments and 2 approved as minor amendments. The minor amendments were to add 2,158 hectares of renewal treatments and to add harvest areas in exchange for withdrawing an OLL site. Most amendments were processed in under four weeks, although there were a few that were outstanding for 6 months to 22 months.

2) 2000-2020 English River FMP

For the 2000 former English River FMP there were a total of 61 amendment requests with 56 approved as administrative amendments, 2 approved as minor amendments, and 3 cancelled. The minor amendments were related to the Roper Road and to change the AOC wording to leave the Gulliver River Bridge in to reflect an MOEE bump-up decision related to the 2000 FMP. The average approval time was four weeks or less indicating good review and approval times for MNR. There were two amendments that appeared to have been dealt with through verbal approval. Amendment #16 (for dropping an AOC) had an approval date prior to the amendment request date. Amendment #61 was approved on April 7, 2004 after the 2000-2024 FMP became obsolete with the approval of the 2004-05 contingency FMP/AWS.

3) Current English River 2004-2024 FMP and 2004-05 Contingency FMP

The 2004 FMP and 2004-05 contingency FMP for the English River Forest had the amendments and AWS revisions combined in the amendment summary. There were a total of 34 amendment requests with 23 approved as administrative amendments and three approved as minor amendments to the 2004-05 contingency FMP/AWS, and eight amendment requests were put on hold. During 2005-06 AWS, one additional administrative amendment was approved.

As noted earlier, the 2004-05 contingency FMP was approved without one full year's available harvest area and silviculture operations, which was addressed through three large minor amendments #8, #10, and #15) and two very large administrative

amendments (#1 and #22) within five months of approval. Although amendments #1 and #22 were large (total of 660 ha of harvest), the MNR felt justified in approving them as administrative because public consultation for the areas encompassed had already taken place. (The area encompassed by amendment #1 was originally included in the Draft Contingency Plan, which was subject to public review, but was removed from the final version, before being included again as an amendment. The area encompassed by amendment #22 was included in the public review of the Draft FMP which occurred prior to the amendment being incorporated into the contingency plan.) Overall, the 25 amendments (3 minor and 22 administrative) to the 2004-05 contingency plan during the audit period encompassed the following:

- 131 additional harvest blocks comprised of 4,161 hectares and 700,000 cubic metres;
- a total of 128 blocks had tertiary access amended, there were 29 new crossings, a new secondary road (i.e. Newfoundland Road) and close to 100 kilometres of road maintenance;
- a total of 860 hectares of site preparation, 143 hectares of planting, 110 hectares of slash pile burning, 2,266 hectares of pre-commercial thinning, and 9,882 hectares of FTG surveys; and,
- four blocks harvested in the prior 2000 English River and 1999 Brightsand FMPs were amended in to allow processing and hauling of wood.

The audit team notes that the operations and operational area encompassed by the amendments very large relative to the time in which the plan was in place. This we take to be indicative of poor planning associated with the initial contingency plan submission.

In addition, none of the amendments included a discussion of their implications for the sustainability of the forest. Given that some of the amendments were very large, it would have been reasonable to include such text to document the sustainability of the proposed amendments.

In many cases it took up to four submissions to finalize amendments. Advance email or verbal approval was provided by MNR staff for some amendments and they would follow-up with the formal amendment documentation shortly after (e.g. Amendment #22 received email approval to harvest in three blocks on February 8, 2005, with formal approval on March 2, 2005).

Recommendation # 15

The MNR should not approve amendments until all required alterations and all documentation requirements have been satisfied.

The amendments were well tracked with a Bowater submission number, an MNR amendment number and an MNR AWS revision number.

Reasons for Amendments

Table 11 compares the reasons for amendments in the 1999-2004 FMP term and the current 2004-2009 term. During the 1999 term the primary reasons for amendments were values related to AOCs, water crossings, and tertiary roads. Tertiary roads and crossings continue to be a major reason for amendments during the 2004 term indicating opportunities for improved block access planning. There were also a substantial number

of harvest, renewal and text/table amendments in the current (2004) term that reflect the incomplete 2004-05 contingency plan/AWS and shortfalls in operational planning for the 2004 FMP.

Table 11. Reasons for approved amendments for the terms 1999-2004 and 2004-09.

Amendment Reason	Term	
	1999-04	2004-09
Text/Tables	2	5
Values related to AOCs	15	0
Values related to crossings	9	0
Crossing	13	4
Primary or secondary roads	1	0
Tertiary Roads	8	6
Tertiary Road Crossings	8	0
Harvest	6	5
Salvage	2	0
Renewal	3	5
Combination of reasons	13	1

The 2004 FMPM indicates that amendments will no longer be required for changes to values, AOC prescriptions and water crossings in some circumstances, which will help reduce the number of amendments.

Most amendments were processed in two to six weeks; only a few took longer. Incomplete or poor quality amendment requests and amendment submissions and delays in resubmissions made it difficult for MNR to meet the FMPM suggested 15-day review and approval standard for all amendments. In February 2004, the MNR developed the "*Dryden District FMP Amendment Process*" to streamline the review and approval process. It identifies the requirements for four amendment process steps: request, categorization, content review, and approval and provides a checklist to guide staff through each step. In spite of the fact that this process is being followed and is helping staff organize and process amendments, the large number of amendments continues to occupy a significant amount of MNR and Bowater staff time.

Amendment Copies

Copies of amendments are required to be forwarded to all government offices which retain FMP copies. The rationale for this is that approved amendments form part of the FMP, and as such should be available with plan copies. The previous IFA of the former English River Forest found that amendments had not been forwarded to MNR's Northwest Regional office and addressed this in a recommendation. In spite of the fact that the status report on the implementation of the previous audit's recommendations notes that the recommendation had been addressed, this audit found that problems with this process remain. Interviews with the MNR Area Forester indicated that the current 2000-04 amendments have been boxed up and have yet to be forwarded to all plan copy locations (i.e. MNR Northwest Region, MNR, Forest Management Branch, MNR Toronto, and MOEE regional office). The MNR main office staff indicated that they had an amendment summary showing 16 amendments for the 2000 former English River FMP, and 5 amendments for the 1999 Brightsand FMP. There were no amendments on

file for the 2004 Contingency FMP/AWS or for the 2004 FMP. District amendment records showed that there were a total of 80 amendments (4 minor and 76 administrative) to the 1999 Brightsand and 2000 former English River FMPs and 26 amendments (3 minor and 23 administrative) to the 2004 English River FMP, which also included the 2004/05 Contingency FMP. Therefore, amendments are not being forwarded as per the requirements on Page A-198 of the FMPM.

Recommendation # 16

The MNR shall forward copies of appropriate amendments to all plan copy locations as per the requirements of the FMPM.

3.3.9 Annual Work Schedules

A total of nine Annual Work Schedules (AWSs) were prepared and submitted by Bowater during the 2000 to 2005 audit term:

- 2000-01 former English River
- 2000-01 Brightsand
- 2001-02 former English River
- 2001-02 Brightsand
- 2002-03 former English River
- 2002-03 Brightsand
- 2003-04 former English River
- 2003-04 Brightsand
- 2004-05 English River

Table 12 provides a summary of the AWS submission and approval results for the audit period. According to the FMPM (Section 3.1, page B-5) the deadline for submitting a draft AWS is December 31 each year. This was to be followed by a 30 day MNR review period, and final approval is required by March 16 to allow 15 days for the public to inspect the approved AWS prior to operations commencing on April 1.

Bowater typically met the AWS draft submission deadlines, however the submissions were often incomplete and suffered from numerous production errors. All but two AWSs were submitted prior to December 31 as required (although we could find no record of the submission date for the 2000-01 English River AWS). The 2001-02 AWS for the former English River Forest was submitted on January 2, 2002 very close to the deadline, and the 2003-04 AWS for the former Brightsand Forest was not submitted until March 13, 2003 which was well after the deadline.

Table 12. Summary submission, review and approval dates of AWSs during the review period.

AWS	Draft Submission	MNR Review Complete	Final Submission	Final Approval
2000-01 ER	19-Jan-00	18-Feb-00	05-Mar-00	10-Mar-00
2001-02 ER	02-Jan-01	25-Jan-01	28-Feb-01	14-Mar-01
2002-03 ER	24-Dec-01	01-Feb-02	05-Mar-02	15-Mar-02
2003-04 ER	30-Dec-02	05-Jun-03	09-Jul-03	17-Mar-03

AWS	Draft Submission	MNR Review Complete	Final Submission	Final Approval
2000-01 BS	28-Dec-99	02-Feb-00	08-Mar-00	14-Mar-00
2001-02 BS	20-Dec-00	02-Feb-01	27-Feb-01	16-Mar-01
2002-03 BS	21-Dec-01	01-Feb-02	01-Mar-02	15-Mar-02
2003-04 BS	13-Mar-03	12-Nov-03	28-Nov-03	17-Mar-03
2004-05 ER Conting/AWS	30-Dec-03	30-Jan-04	11-Jun-04	16-Mar-04

The first MNR reviews and list of required alterations were all completed by the end of January (or early February) as required. Often as many as four or five submissions were reviewed before the required alterations were fully addressed. The worst examples were the 2003-04 former English River and Brightsand AWSs, which required five different Bowater submissions and MNR reviews, and the 2004-05 Contingency FMP/AWS which had seven different submissions and reviews. Normally we would expect a maximum of three submissions of an AWS: a complete initial draft, a final version addressing all required alterations, and the approved version which addresses a small number of missed or new alterations. Many of the 2003-04 AWS alterations that were not addressed were due to the need for silviculture prescriptions or forest operating prescriptions that were linked to each harvest stand. Bowater explained start-up problems with "Woodlands the System" made this requirement difficult to meet.

MNR met the initial review deadlines for all of the AWSs. The final MNR review was often completed later due to the numerous versions submitted.

Bowater was effective in meeting the final submission deadlines for the earlier 2000-01, 2001-02, and 2002-03 AWSs. However, the 2003-04 former English River, 2003-04 Brightsand, and 2004-05 Contingency FMP/AWS for the English River all suffered from substantial delays in addressing the final alterations, which meant these were not addressed until well after approval was given by MNR. For both 2003-04 AWSs where Bowater submitted five versions, MNR approval was provided after the 2nd MNR review, but was conditional on all required alterations being addressed. The required alterations were not fully addressed until July 9, 2003 for the former English River AWS and until November 28, 2003 for the Brightsand AWS. Therefore, operations were being implemented for between three and eight months without the AWS planning requirements being fully met.

Issues regarding the submission of the contingency FMP/AWS have been discussed earlier (Section 3.3.8).

The following numbered sections provide information on each AWS:

1) 2000-01 Former English River AWS

This AWS was generally good, with a good MNR review and alteration listing that was addressed well by Bowater. Approval with conditions was given by the district manager.

There were several public comments included which were adequately responded to by Bowater and evidence of trapper notification. All AWS requirements were met in the final version.

2) 2001-02 Former English River AWS

Bowater submitted the draft AWS with a large list of outstanding items. Some text figures don't match tables probably due to revisions (e.g. Mechanical site prep). MNR staff were concerned over the lack of planned tending, FTG assessments, and wildfire regeneration planning. The aerial tending component of the plan was not approved until FMP-25 in the 2000-2020 FMP was revised to include this treatment. Some of the harvesting proposed in the AWS also required an FMP amendment. Conditional approval was given. (Conditional approval in this context means that the AWS was approved with missing components). There were 12 public comments and Bowater responses regarding minor issues. All AWS requirements were met in the final version.

3) 2002-03 Former English River AWS

This AWS was conditionally approved. Only a cursory review of the AWS was completed by MNR management staff prior to approval due to the Ontario Public Service strike in the spring of 2003. A detailed AWS operations and FOP review was not completed until after the strike. Bowater was to define compliance monitoring responsibilities for overlapping licensees in the annual compliance plan by April 30 as a condition of approval and this was met on April 29. All AWS requirements were met in the final version.

4) 2003-04 Former English River AWS

The original draft was missing FOPs and the compliance plan, and Table and AWS-4 was incorrect. (MNR permits compliance plans to be submitted later as a condition of approval.) The annual compliance plan did not discuss past compliance issues and results nor was there a schedule of operations to help direct compliance inspections. With four submissions and reviews, Bowater did not effectively address all of MNR's required alterations. Also amendments #42 and #45 were not approved in the AWS until they were processed. All alterations were to be addressed by April 1, 2003 as a condition of approval, however Bowater did not meet this requirement until eight months past the deadline on November 28, 2003. All AWS requirements were met in the final version.

5) 2000-01 Brightsand AWS

Some of the proposed silviculture was contingent on approving an amendment to the FMP. No fuelwood area was identified. MNR notified Bowater that the minimum balance was not met in the Forest Renewal Trust account as of February 2, 2000 and Bowater had to top up the balance prior to the AWS approval. All AWS requirements were met in the final version, however the approval page was not stamped by an R.P.F. to certify the FOPs.

6) 2001-02 Brightsand AWS

Conditions of approval were to add missed water crossings, and define outstanding depleted FTG area during the AWS term. The planned silviculture was contingent on an FMP amendment. No fuelwood area was identified. All AWS requirements were met in the final version.

7) 2002-03 Brightsand AWS

There was no compliance plan, only a statement that Bowater was reviewing the compliance results and plans on all of their SFLs and they would be following up with a revised annual compliance plan. Bowater was to define compliance monitoring responsibilities for overlapping licensees in the annual compliance plan by April 30 as a condition of approval and this was met on April 29. Operations for pending amendment #8 were incorporated, but not approved as a condition of approval until the amendment had been processed. Only a cursory review of the AWS was completed by MNR management staff prior to approval due to the Ontario Public Service strike in the spring of 2003. A detailed AWS operations and FOP review was not completed until after the strike. No fuelwood area was identified. All AWS requirements were met in the final version.

8) 2003-04 Brightsand AWS

There was no compliance plan, only a statement that Bowater was reviewing the compliance results and plans on all of their SFLs and they would be following up with a revised annual compliance plan. A condition of approval was to define compliance responsibilities for overlapping licensees. Also amendments #19 and #20 were not approved in the AWS until they were processed. All alterations were to be addressed by April 1, 2003 as a condition of approval, however Bowater did not meet this requirement until eight months past the deadline on November 28, 2003. No fuelwood area was identified. All AWS requirements were met in the final version.

AWS Revisions

Overall the number of AWS revisions appears to be rather high at 131 during the five-year term of the audit for an average of 26 per year. There were 23 in 2000-01, 23 in 2001-02, 31 in 2002-03, 28 in 2003-04 and 26 in 2004-05. All of the AWS revisions to the 2004-05 AWS were also FMP amendments as this AWS was also a contingency FMP. The approval times for AWS revisions were normally between one and three weeks.

The AWS revisions were comprised of 32 water crossings, 17 tertiary roads, 17 renewal, 14 harvesting, 13 harvesting and roads, 13 text/tables, 10 values/AOC, 10 tertiary water crossings, 3 combination, and 2 primary and secondary roads. A total of 102 of 131 revisions were associated with an amendment, leaving 29 stand-alone AWS revisions.

Some specific examples of AWS revisions which the audit team believes are indicative of broader issues include:

- AWS revision #6 to the 2002-03 English River AWS added numerous tertiary roads, water crossings, road maintenance, and harvest blocks to 21 basemaps is indicative that elements of operational planning were overlooked in the development of the AWS;
- AWS revision #16, #3, #8, and #12 to the 2003-04 English River AWS added water crossings and tertiary road corridors to multiple harvest blocks, which indicates that the operational access planning did not occur during the development of the FMP or the AWS;
- AWS revision #4 to the 2002-03 Brightsand AWS was not approved until October 30, 2003, which was beyond the date at which the AWS expired; and
- As noted earlier, several larger AWS revisions associated with the 2004-05 contingency FMP/AWS were of concern. Numerous roads, crossings,

harvesting, and renewal areas were revised into the AWS. Two process and haul cut blocks were also added. Given that harvesting was taking place in these blocks, prior to April 1st, it seems that that the processing and hauling of the wood could have been planned when the AWS was prepared rather than revising the areas in after approval.

The larger number of AWS revisions and the predominance of larger revisions in the recent years are indicative that AWS operational planning is lacking. The Company routinely made large changes to annual operating plans, which could be avoided through more thorough AWS operational planning.

The following were the key issues identified with the AWSs:

1. Bowater submitting and MNR reviewing incomplete or incorrect draft and final submissions;
2. Bowater not addressing MNR required alterations in a timely manner;
3. The fact that conditional approvals or conditions of approval were given means that AWSs were approved with missing components. Almost every AWS approved during the 2000 to 2005 audit period was approved with conditions to allow operations to proceed by April 1st. Most of the conditions were related to required alterations not being met. The FMPM does not provide provisions for conditional approval of AWS's. It is either approved or not approved with required alternations identified;
4. Several of the AWSs were submitted and approved with operations that were not consistent with the FMP. Subsequent amendments were necessary after the AWS was approved to maintain consistency with the FMP;
5. Incomplete annual operations planning led to numerous AWS revisions and FMP amendments;
6. Most AWSs kept in the Company and MNR offices do not contain the full record of public consultation to provide an indication that the public consultation requirements have been met and to provide an indication of the public comments received and how they have been addressed. Few or no records of plan inspection notices, public comments and responses are included in Company AWS copies;
7. The mining claim holders were not notified as required by the FMPM; and,
8. Contrary to FMPM requirements, the approval pages of most AWSs were not stamped by an R.P.F. to certify the FOPS.

In light of these concerns, the following recommendations are provided:

Recommendation # 17

Bowater should ensure that AWSs are completed in accordance with the approved FMP upon submission and should not submit AWSs until all planning requirements have been completed and accurately depicted.

Recommendation # 18

The MNR should not accept or review incomplete or inaccurate AWSs.

Recommendation # 19

The MNR should not approve incomplete annual work schedules. Formal approval should only be given once all required alterations and all documentation requirements have been satisfied.

Recommendation # 20

The Company should ensure that All AWS approval pages are stamped by the R.P.F. to certify the silviculture prescriptions or FOPs as per FMPM requirements.

Recommendation # 21

The MNR should ensure that the FMPM notification requirements for trappers and mining claim holders are met and keep appropriate documentation as part of the public consultation record.

3.4 PLAN IMPLEMENTATION**3.4.1 Areas of Concern**

The IFAPP directs auditors to examine whether AOC protection measures were implemented as in the approved prescriptions, and that the prescriptions were suited to the specific site conditions. As noted earlier, AOC prescriptions developed for the Forest were comprehensive and very well considered. The inspection of field implementation of AOCs showed compliance with the prescriptions. A couple of previously identified minor trespasses of AOCs were viewed, but no systemic issue of this sort was apparent.

During the field inspection, we viewed two instances where harvesting within the AOCs of warm/coolwater lakes was carried out, as is permitted by the Fish Habitat Guidelines²². In all other instances no-harvest buffer zones comprised the full width of the AOC. On the sites inspected, permitted harvesting within the AOC was well done, and showed that care had been taken in adhering to the appropriate measures as identified in the Code of Practice for Timber Management Operations in Riparian Areas²³. This raises the question of why this practice is not used more often. As discussed in Sections 3.3.6 and 3.4.2, wood supply is a concern on the English River Forest, and appropriate harvesting within AOCs presents an opportunity to provide some additional wood beyond that which the Company normally considers available. In some instances there is reluctance on the part of operators to work in riparian zones as it is contrary to some historical aspects of their training, and there may also be a reluctance on the part of companies to operate there as they may be concerned about public perceptions. Nonetheless, we believe the Company should consider using this option of harvesting within riparian AOCs more often.

²² Ministry of Natural Resources. 1988. Timber Management Guidelines for the Protection of Fish Habitat. Queens Printer for Ontario, Toronto.

²³ Ministry of Natural Resources. 1991. Code of Practice for Timber Management Operations in Riparian Areas. Queen's Printer for Ontario, Toronto.

Suggestion # 4

The Company should consider taking advantage of opportunities to harvest within riparian AOCs more often, where permitted by the Fish Habitat Guidelines.

3.4.2 Harvest**Harvest Operations**

Operationally, the harvesting operations on the Forest were generally undertaken well. Utilization was quite good. Some site disturbance (rutting) was observed, but it was localized and only on a low proportion of sites, and so it does not constitute a concern.

The previous English River IFA identified piles left behind by Marcric's chipping operations as an issue because they were so deep that nothing could grow on the land that they occupied, which could be quite extensive. The Company has tried to correct this problem by spreading the piles over a wider area, but this must be done well otherwise the end result will simply be a more extensive problem. The audit team saw sites where piles had been spread out had been scarified and planted. Some of the trees planted on the chip piles where the debris was deeper than about 6" were surviving but were chlorotic and did not look as though they would survive.



Figure 6. An example of a well dispersed chipper debris pile supporting renewal growth.

The audit team also saw sites where scoops of chips had been moved into the cutover, and this appeared to be partly successful, although because the chips were dumped rather than spread, the end result was to create spots where there would be no renewal because the chips were too thick. While the audit team commends the Company for its progress in mitigating the negative impacts of chip piles, the audit team feels that the problems have not been solved completely.

Recommendation # 22

The Company should continue to develop techniques for managing chipper piles.

The audit team also observed that in some areas relatively few slash piles from areas harvested during the review period were burned on the sites viewed by truck, and also by helicopter. The Company believes that the majority of its slash piles are being burned, but the Audit Team had a somewhat different impression. Part of the explanation may be that, as per one of the recommendations from the previous IFA of the former English River Forest, the Company was addressing a backlog in slash pile burning, so a good deal of the 2000-2002 burned areas occurred on areas harvested pre-2000, which were not a focus of the audit's inspections. The audit team's impression from the aerial inspection of the forest was that considerable areas harvested on the Brightsand Forest during the review period have yet to have slash burning, as is indicated by the Annual Reports.

Nonetheless, there still seems a difference in perception between the audit team and the Company as to the extent of slash pile burning successfully achieved on the forest during the review period, and it is not clear how to reconcile the two perspectives.

The slash pile burning reports also reflect these two perspectives. On the Brightsand Forest, no slash pile burning was done in fall 2000, but extensive burning was done on the former English River Forest. The 2002 Slash Pile Burning report for the Brightsand Forest, which described slash pile burning conducted between November 5 – 9, 2001, reported that 1,374 gross ha of cutover were burned and 80 – 100% consumption was achieved of all slash piles that were ignited. It continued by stating "Through post-burn audits it was found that a great number of slash piles were not ignited. Due to the number of piles missed by the Burning Contractor, the blocks included in the Slash Pile Burn Plan cannot be listed as complete." A complete audit was planned for the spring, with the unburned piles to be added to the 2002 Slash Pile Burn Plan. The 2002 Slash Pile Burning Report for the English River identified the same problems. The 2002 slash pile burning programs on both forests were reported to have been successful.



Figure 7. An example of a site with abundant unburned slash.

The audit team feels that the Company should assure itself that its slash pile burning program is yielding acceptable results.

Recommendation # 23

The Company should conduct a field check of its slash pile management program to assess whether its status is satisfactory and ensure that, if there are problems, they be resolved prior to the next Independent Forest Audit.

Residual Trees

For most of the period under review, residual tree management on the forest was obliged to follow the snag-tree requirements of the Marten guide, which require the retention of six dead or declining trees per ha. For plans implemented in 2003 or later, the additional requirements of the NDPEG guide apply. The NDPEG guide requires that harvesting operations leave standing an average of 25 residuals per ha. The trees are to consist of 6 large, living, potential cavity trees and 19 other trees of at least 10 cm dbh and 3 m in height.

The audit team found that the required numbers of residuals were usually left on the sites we inspected. However, we note that the requirements of the NDPEG guide were only in place during the final year of the review period and, although we found

compliance with the direction in the guide for that year, we did not visit a high number of sites harvested in 2004/05. Nonetheless, our overall impression is of compliance with the required direction.

Harvest Maps

Staff from Buchanan pointed out to the audit team that the harvest maps provided by Bowater to their operators are very difficult to follow. Visual inspection of a sample of maps by the audit team confirmed this perspective. The maps have a lot of clutter, reserve widths are not marked on them, and roads, crossings and corridors are not apparent. Using maps of limited legibility has the potential to result in trespasses or incorrect treatments. Staff from Bowater indicated that they are aware of the concerns and agree that the maps can be difficult to follow. Bowater staff pointed out that the maps are ingrained within Bowater's WTS system and have been developed to adhere to the FIM requirements. Nonetheless, they are sympathetic with the concerns raised by Buchanan staff and have endeavoured to produce more manageable maps in the past, but since the issue still exists, we have provided the following suggestion:

Suggestion # 5

Bowater staff should continue to work with staff from Buchanan to provide legible operations maps.

Achieved vs. Planned Yields and Harvest

The Audit Team was able to review the annual reports for the first four years of the audit period, which included two annual report pre-submissions prepared for the audit team in September 2005. As noted above, the annual report for the 2004-05 fiscal year was not due to be submitted until November 15, 2005, past the week of the audit site visit.

On the former English River Forest, 85% of the planned average annual harvest area was actually cut during the four years for which the plan was in effect.

The harvest in 2000-01 was quite low, and the Annual Report for that year ascribed this to the inability of Ignace Saw and Noopimiing to harvest their allocations, the availability of sufficient spring harvest areas on the Dog River-Matawin (which meant that a contractor harvested there instead of on the English River Forest), and poor (but improving) markets for white birch. The following year, warm winter weather precluded harvesting on many lowland spruce areas but increased the amount of upland harvesting, which favoured the hardwood harvest in 2001-02 but reduced it in the following years.

On the Brightsand Forest, during the entire plan period, a total of 86% of the planned harvest area was actually cut. The annual reports provide little commentary on the major factors that affected harvesting during the period. The 2000-01 Annual Report notes that salvage stumpage rates were received on 200.3 ha harvested by Buchanan, but the area was recorded as normal operations. This is contrary to FMPM annual report requirements that salvage harvest area and volume are to be broken out from "normal" operations. The reasoning offered in the AR for not doing this was that these salvage areas were not identified in the FMP. However, this rationale is weak because

most salvage harvest areas are not identified in FMPs, since salvage is designated in response to natural disturbances, which are not predictable as a rule.

Recommendation # 24

The Company should produce separate tables for salvage harvesting and for normal harvesting operations in Annual Reports as required.

Overall, on both the former English River and Brightsand Forest, during the first four years of the audit period, the actual harvest volume was roughly 75% of planned, with approximately 80% of the planned softwood volume actually harvested, and 60% of the hardwoods. Utilization of planned volume was greater on the Brightsand Forest. During the full term of the Brightsand FMP (which includes 1999-2000, which is outside of the audit window), 89% of the planned softwood volume and 41% of the planned hardwood volume was cut. On the former English River Forest, on an annualized basis, 76% of the planned softwood and 67% of the planned hardwood volume was harvested. Table 13 shows the annual softwood and hardwood harvest volume data for the two forests during the two planning periods.

Table 13. Planned and Actual Harvest Normal Volumes (M m³/yr).

Period /Year	Conifer Volume (Mm ³ /yr)	Hardwood Volume (Mm ³ /yr)
Brightsand 1999 FMP		
Avg Planned	288	74
Actual 1999-2000	186	24
Actual 2000-01	223	21
Actual 2001-02	402	48
Actual 2002-03	357	49
Actual 2003-04	110	9
Avg Actual (1999/00 – 03/04)	256	30
English River 2000 FMP		
Avg Planned	629	194
Actual 2000-01	436	184
Actual 2001-02	530	165
Actual 2002-03	582	84
Actual 2003-04	364	86
Avg Actual (2000/01 – 03/04)	478	130

(Source: Planned harvest volume is from the FMP, Actual harvest volume from ARs).

Comparing the actual versus planned harvest areas and volumes on these two forests reveals a general overestimation of harvest volume in planning. On the Brightsand Forest, 86% of the planned harvest area provided only 79% of the planned harvest volume, while on the English River, 85% of the planned harvest area yielded 74% of the planned volume. Note that the requirement to retain snags for wildlife habitat was expected to lower the yield by one cubic metre per hectare, which was removed from the total planned volume.

The auditors were very concerned to hear that the Company had "run out of wood" part way through the period of the 2000 English River FMP. Because the 2000 English River

FMP was for a five-year period, but was shortened by one year to accommodate the amalgamation of the Brightsand and English River Forests, at April 1, 2004 there should have been at least one more year's worth of allocated wood available to harvest on that Forest. However, the Company and MNR stated that the allocations remaining at that time were small and scattered, and therefore uneconomic to harvest. This issue was most severe in the part of the Forest located within 90 minutes of Ignace, which is operated by Marcri, and became evident as early as May 2002, when MNR requested that the Company identify one year's worth of area and volume by forest unit that would be left when the 2000 English River FMP was terminated one year early. The lack of available wood was quite evident by the time the Company and MNR were discussing whether to develop a contingency plan for April 1, 2004. While this shortage of economically available wood was not the only factor that contributed to the decision to prepare a contingency plan, it appears to have been a key factor in the decision to classify the reason for the contingency plan being required as being due to a "delay in plan preparation" (see Section 3.3.8 for more discussion). Bowater noted that 737 ha of area allocated in the 2000 FMP was actually harvested late in the last year of the 1995 FMP period, due to unseasonably warm weather making winter harvest areas inoperable. While this contributed to the use of the 2000 FMP allocation, the remaining planned allocation still should have provided a year's worth of timber. The allocations in the 2000 FMP clearly included a substantial amount of forest area that was physically present on the forest but was effectively unavailable for harvesting.

This same issue was identified in the 2000 IFA for the English River, which covered the 1995-2000 period. That report noted that all forest units had been under cut and, in providing explanations, stated "There does appear to be a problem in the spruce and balsam fir units. Low yields resulting from old forest resource inventory information, inaccessible stands, wildfire and losses due to budworm account for some of the apparent undercutting in conifer."

The audit team found no evidence that the general approach used to allocate harvest spatially changed between the development of the 2000 plan for the former English River and 2004 plan. Text regarding allocation approaches are very similar in the 2000 and 2004 plans and there is no mention in the 2004 plan of attempting to avoid issues of economic unavailability of allocated wood that occurred in relation to the 2000 plan. Company staff presented the opinion that economic availability is a function of specific circumstances and therefore not a necessary criterion at all times in considering allocation options. The foregoing suggests that part of the Forest that is considered to be available for harvesting during plan development, is effectively unavailable. This implies that the available supply of timber on the forest is overstated, and the planned harvest level cannot be obtained. Moreover, harvesting at current rates will likely lead to a far lower future harvest than is currently projected, and it can be argued that the silvicultural program is probably at sub-optimal intensity, especially given the increased reliance on natural renewal in the 2004 FMP.

This is a very serious issue and it contributes to our conclusion that the series of operations proposed in the 2004 Forest Management Plan for the 2004-09 period is inconsistent with sustainable management of the Forest (see Section 3.7.4). The projected future harvest is also over-estimated for the same reason. It is possible that a major plan amendment may be required to deal with this. The following recommendation is intended to support the work required to complete the potential amendment.

Recommendation # 25

As part of the process of identification of the available timber supply on the English River Forest, the Company and MNR should identify and subtract from the 2004 Forest Management Plan those stands which are not economically operable.

Spatial Modelling

In very broad terms there are two types of wood supply models –spatial and aspatial. Aspatial models do not take explicit account of the location of forest stands in calculating harvest areas and wood availability, whereas spatial models do. In forests without a low degree of spatial heterogeneity in stand distribution, the use of aspatial models is appropriate. However, spatial models are much more appropriate tools in circumstances where the forest is highly fragmented with pockets of mature timber scattered throughout. Spatial models are also appropriate when managers are faced with the need to take spatial constraints (such as caribou blocks and marten cores) into account. Clearly, the English River Forest represents an example of a forest where the use of a spatial planning model can provide superior planning outcomes.

Both the 1996 and 2004 FMPs identify that in order for an analytical tool to be used in the preparation of an FMP, it must be sanctioned as appropriate by the MNR. The MNR has a procedure directive (FOR 02 02 02) which identifies the process for approval of analytical tools. At present (according to MNR Forest Management Planning directive FOR 02 02 01), SFMM is the only wood supply model approved for use in Forest Management Planning in Ontario.

Company staff informed the audit team that they approached the MNR with requests to undertake spatial modelling for use in the 2004 FMP. However, the Company found the MNR's needs/requests for training in the use of the model, and the concomitant requirement for the use of SFMM in the FMP process to be overwhelming disincentives. MNR staff noted that the Company request was made after the FMP terms of reference had been developed, was out of step with the approval process, and would have taken too long to incorporate into FMP development. MNR staff did, however acknowledge that their own staff levels are a major impediment to the approvals process and a disincentive for companies to attempt to see products through the process.

We believe that given the nature of the English River Forest, it is ideally suited for the use of spatial wood supply models and that the use of such a model would help address issues that bedevilled the 2004 FMP development process. If used appropriately, a spatial wood supply model could help make strides to improve the sustainability of management of the forest.

Suggestion # 6

The Company and MNR should identify a strategy for the use of a spatial wood supply model in the development of the 2009 English River FMP.

Recommendation # 26

Corporate MNR should allocate sufficient resources so as to facilitate timely approval of spatial wood supply models in forest management planning.

3.4.3 Renewal

Overall, for the sites that were observed in the field during the audit, the silvicultural treatments were consistent with the silvicultural ground rules and forest operational prescriptions. The boundaries and coverage of site preparation, planting, and tending projects were good. The areas were well-matched to the areas mapped and reported in the approved versions of the Annual Reports, and were well-matched to actual site conditions and appeared to be effective in meeting the silvicultural objectives.

Natural Regeneration

We observed evidence of substantial natural ingress on the areas that had been reported as natural regeneration. Ingress of conifers was most apparent on the "pure" forest units, i.e. jack pine and black spruce. Good ingress of aspen from suckering was also observed on the naturally regenerating hardwood sites. Natural ingress was also present, to varying degrees, on sites that had been regenerated artificially. During the audit period Bowater had conducted low-density fill plants on a number of sites, taking advantage of this natural ingress and enhancing the stocking of these areas.



Figure 8. Example of natural ingress by different conifer species on a natural regeneration area.

Careful Logging Around Advance Growth (CLAAG) treatments on the English River Forest have been applied only on the area of the former Brightsand Forest, due partly to greater availability of suitable sites in this area, but also related to differences in the ability of the contractors operating on the Brightsand versus the former English River Forest. The unionized contractor which conducts most of the harvest on the former English River area is not trained for CLAAG operations. There was little or no rutting disturbance and the traffic control on the sites appeared to be good. For the most part, the CLAAG treatments appeared to be effective. On some sites, however, there was little advance growth present following the CLAAG harvest. This appeared to be mostly a result of the pre-harvest stand condition (little advance growth present), but in some cases was a result of operators leaving few residual trees and advance growth stems. Nonetheless, natural ingress on the CLAAG sites appeared to be substantial, and we believe that these sites will regenerate to meet the silvicultural standards.

Site Preparation and Tree Planting

Generally the choices of site preparation treatments were appropriate for the site conditions, and the coverage and quality of the treatments was good. During the audit period, most of the site preparation was conducted with powered and passive trenching equipment.

Species choices for tree planting were generally well-matched to the observed site conditions. Bowater has done a good job of directing species within planting projects to site-specific terrain. During the audit period the Company planted over 19 million trees on the former English River and Brightsand Forests. On the former English River Forest, the relative proportions of tree species were appropriate for the forest units on the harvested area and were consistent with FMP objectives. Although the forecast numbers of red and white pine were not achieved, the FMP objective of planting a combined total of 120,000 trees was considerably overachieved. On the Brightsand Forest fewer jack pine, and more black spruce than planned were planted. This was attributed to the site conditions encountered within the harvest areas for the period.

Table 14. Numbers of trees planted and the frequency distributions by species, on the English River and Brightsand Forests for the 2000-2005 and 1999-2004 FMP periods respectively.

Species	# of trees planted 2000-2003 (000s)	% of planned numbers	Planned species distribution	Actual species distribution
Former English River Forest				
Jack Pine	1,872	75.5%	26%	21%
White Pine	57	59.8%	1%	1%
Red Pine	322	93.5%	4%	4%
Black Spruce	6,504	101.3%	68%	73%
White Spruce	173	108.3%	2%	2%
Total	8,929			
Brightsand Forest				
Jack Pine	4,382	40.1%	82%	43%

Species	# of trees planted 2000-2003 (000s)	% of planned numbers	Planned species distribution	Actual species distribution
Red Pine	302	172.5%	1%	3%
Black Spruce	5,541	263.8%	16%	54%
White Spruce	0	0.0%	2%	0%
Total	10,224			

Seeding and Silvicultural Achievements

Generally, the jack pine seeding treatments we observed in the field were of excellent quality. Density and survival of the seeded stock was good in all cases. The following tables compare the forecasted targets for regeneration and site preparation, with the actual achievements for the 2000-2005 2004 planning term for the former English River Forest, and the 1999-2004 FMP term for the Brightsand Forest. Since the actual harvest area achieved was less than planned, forecasts for renewal activities in the respective FMPs have been pro-rated according to the actual harvest levels for each forest to calculate the level of achievement of the FMP forecasts.

Table 15. Silvicultural accomplishments for the 2000-2005 FMP term for the former English River Forest as a percentage of the forecast activities.

	FMP Forecast (5 years)	Forecast pro- rated to 4 year period and actual harvest level	Area treated, 4 years (2000- 2003)	Percent of forecast achieved
Regeneration				
Natural Regeneration				
Clearcut	6,306	4,311	3,286	76.2%
Seed Tree Cut	1,180	807	181	22.5%
Subtotal Natural	7,486	5,117	3,468	67.8%
Artificial Regeneration				
Planting	7,576	5,179	6,497	125.5%
Direct Seeding	6,821	4,663	2,405	51.6%
Subtotal Artificial	14,397	9,842	8,902	90.5%
Total Regeneration	21,883	14,959	12,370	82.7%
Site Preparation				
Mechanical	13,491	9,222	7,257	78.7%
Chemical	2,000	1,367	175	12.8%
Total Site Preparation	15,491	10,590	7,432	70.2%
Slash Pile Burning (net ha)	500	342	501	146.6%
Tending				
Cleaning				
Chemical - ground	680	544	235	43.3%
- aerial	4,380	3,504	2,775	79.2%
Pre-commercial thinning	12,000	9,600	3,559	37.1%
Total Tending	17,060	11,662	6,570	56.3%

Table 16. Silvicultural accomplishments for the 1999-2004 FMP term for the Brightsand Forest as a percentage of the forecast activities.

	FMP Forecast (5 years)	Forecast pro- rated to actual harvest level	Area treated, 5 years (1999- 2003)	Percent of forecast achieved
Regeneration				
Natural Regeneration				
Clearcut	1,650	1,419	1,236	87.1%
Strip Cut	100	86	83	96.7%
Seed Tree Cut	100	86	0	0.0%
Subtotal Natural	1,850	1,591	1,314	82.6%
Artificial Regeneration				
Planting	8,400	7,224	7,321	101.3%
Direct Seeding	3,900	3,354	3,015	89.9%
Subtotal Artificial	12,300	10,578	10,335	97.7%
Total Regeneration	14,150	12,169	11,649	95.7%
Site Preparation				
Mechanical	11,750	10,105	4,480	44.3%
Chemical	0		1,381	
Total Site Preparation	11,750	10,105	6,252	61.9%
Slash Pile Burning (net ha)	430	370	215	58.1%
Tending				
Cleaning				
Chemical				
- ground	100	100	0	0.0%
- aerial	25,399	25,399	5,588	22.0%
Pre-commercial thinning	8,000	8,000	0	0.0%
Total Tending	33,499	33,499	5,588	16.7%

The artificial regeneration program for the former English River Forest has been underachieved by 940 ha, with the principle shortfall being in the direct seeding program. For the Brightsand Forest the artificial regeneration program has essentially been implemented as planned, with 98% of the forecast program being implemented. For both forests the area site prepared was less than that planted and seeded. The difference represents areas that were planted without site preparation, consisting mainly of fill plants on areas with substantial natural ingress.

Natural regeneration targets on both forests have not been achieved, with a shortfall in area of 1,649 ha on the English River Forest and 277 ha on the Brightsand Forest. The shortfalls are related to issues with identifying and reporting on natural regeneration, mainly at the beginning of the FMP terms. Bowater has implemented a survey program to identify these sites for the purpose of improving the reporting aspects, and performance in this regard has been improving.

The combined total shortfall in the forecast renewal program for both the former English River and Brightsand Forests, including both natural and artificial regeneration, is 3,109 ha. While it is likely that many of these areas will regenerate naturally over time through natural ingress, we believe that the Company should take appropriate measures to meet the planned levels of renewal activities by ensuring that these areas receive treatments

during the current FMP term.

Recommendation # 27

The Company should take necessary measures to ensure that all areas harvested during the 1999-2004 FMP term for the Brightsand Forest, and the 2000-2005 FMP term for the former English River Forest receive appropriate renewal treatments during the current FMP term (2004-2009) for the English River Forest.

In the 2000 FMP for the former English River Forest, natural regeneration represented 34% of the planned renewal program, while in the 1999 FMP for the Brightsand Forest, natural regeneration accounted for 13% of the total renewal program. In the 2004 FMP for the English River Forest, natural regeneration is forecasted to account for 54% of the planned renewal program. This increase in the relative importance of natural regeneration reflects the plan objectives and associated silvicultural strategies that will rely more heavily on natural ingress. One reason for the greater reliance on natural regeneration in the 2004 FMP is due to concerns expressed by MNR about the projected declines in the MC1 and MC2 forest units. It was forecast that natural regeneration would be the silvicultural treatment required to achieve greater levels of these two forest units. It will be particularly important to ensure that natural regeneration to conifers is successful on the areas being managed for caribou.

Due to the increased importance of natural regeneration to the renewal program for the English River Forest, we believe it is important that the reporting of natural regeneration areas should keep up with the forecasted levels, commensurate with the achieved harvest levels, on an annual basis.

Recommendation # 28

Bowater should take appropriate measures to ensure that the reporting of natural regeneration will substantially meet the 2004 FMP forecasts on an annual basis.

3.4.4 Tending and Protection

The forecasted levels of cleaning with herbicide applications were not fully implemented in either the former English River or the Brightsand Forests for the 2000-2005 and the 1999-2004 FMP periods respectively. These levels were projected based on the distribution of forest units available within the current and past harvest allocations, but field conditions dictate whether or not the treatments are actually required. A total of 8,589 ha were tended with herbicide applications to control competing vegetation on the two Forests during the FMP terms. Based on our field observations, we believe that the amount of area treated was appropriate for the site conditions that were available on the two Forests.

Bowater conducts surveys as part of its silvicultural effectiveness monitoring program to determine the need for tending. This approach directs the herbicide applications to the most appropriate sites and the portions of those sites where the treatments will be most effective, and thus helps to reduce the overall levels of herbicide applications. In response to public concerns about herbicides, a portion of the cleaning program on the English River Forest was conducted by ground spraying, using a skidder-mounted air-

blast sprayer, on sites close to values or where there were specific public concerns.

On the areas that we observed during the field portion of the audit, the treatments had been conducted appropriately. Boundary control was generally good, the site conditions warranted the treatments that were applied, and the effectiveness appeared to be good (Figure 9). The skidder-mounted ground spray equipment did cause some damage to planted trees and natural ingress on some sites, but in general the damage was minimal and should not significantly affect the stocking or density of the regeneration on these sites.



Figure 9. Example of an area treated with aerial herbicide application showing good effectiveness and good boundary control

Bowater also conducted pre-commercial thinning of 3,559 ha of jack pine on the English River Forest during the FMP term. This represents an achievement of 37% of the forecasted level of 12,000 ha. On the Brightsand Forest, none of the forecasted level of 8,000 ha of pre-commercial thinning was implemented. We were informed by Company staff that the pre-commercial thinning was to be undertaken as part of an attempt to advance old forest conditions to create wildlife habitat (primarily for caribou). The implementation of the program was contingent on the receipt of research funds, which were not found. In the 2004-2009 FMP the forecast has been reduced to 5,000 ha which is likely a more realistic target given the high cost of this treatment.

Many of the naturally regenerated and seeded stands on the forest are of very high density. During the audit period Bowater used a mechanical row thinning device to

facilitate the operation on these sites. The mechanical thinner creates better access into these high density areas for the brush saw crews and allows more area to be treated. Although the machine caused some damage to residual stems adjacent to the rows, in general, the damage on the sites we observed was fairly minimal and overall the treatment seemed to work well. Some of the thinning treatments were conducted by First Nation contractors.

There were no protection activities conducted during the 5-year audit period.

3.4.5 *Renewal Support*

The Company has a good program for the collection and processing of cones and seeds, and presently maintains an adequate seed stock to support their artificial regeneration program through the current FMP period. A portion of the jack pine and black spruce trees grown for planting on the forest are derived from improved seed from first generation seed orchards. For the 1999-2004 and 2000-2005 FMP terms for the Brightsand and English River Forests, the Company considerably exceeded their planned seed collection targets for all species, except for black spruce on the Brightsand Forest (. The program for growing trees for planting is good and the Company works with local growers to ensure consistent quality.

Table 17. Volume of cones (hectolitres) of cones collected by Bowater, and the frequency distributions of cone collection by tree species, on the former English River and Brightsand Forests for the 2000-2005 and 1999-2004 FMP periods respectively.

Species	Planned vol. cones, 2000 FMP	Total vol. collected, 2000 to 2003	Percent of planned
Former English River Forest			
Jack Pine	2,309	2,119	115%
Red Pine	11	19	218%
White Pine	6	52	1088%
Black Spruce	44	108	306%
White Spruce	2	26	2167%
Brightsand Forest			
Jack Pine	797	1,095	137%
Red Pine	0	1	n/a
Black Spruce	62	49	79%
White Spruce	1	0	0%

Bowater participates as a major partner in the Superior / Woods Tree Improvement Association, and is the lead agency in the jack pine portion of the program. Bowater is very active in the operational aspects of tree improvement activities. These include maintenance of first and second generation and clonal seed orchards, which are located both within the Forest and within the region, and a jack pine family test site, which is located on the Brightsand portion of the English River Forest.

3.4.6 Access

During the site visit portion of the audit, the audit team drove on over 500 km of forest access roads. The general impression of the audit team is that the quality of the roads is appropriate for their purposes.

During the field visit portion of the audit, the audit team inspected approximately 20 bridges and culvert installation and found their quality ranged from moderate to excellent. No systemic issues were identified related to crossings. The audit team also inspected a number of instances in the Brightsand portion of the Forest in which crossings had been removed by Buchanan in order to restrict access to areas in order to deal with concerns expressed by remote tourism operators. In these instances the audit team found that the removal and road deconstruction was well done.

In response to the mail-out questionnaire sent by the audit team to a sample of individuals and organizations on the Ministry's FMP mailing list, we received three responses directing our attention to a road issue in the Savoy Lake area. It is documented here because of the number of responses we received on this specific issue. The Company had conducted forestry operations in the area using roads which cottagers use to access their cottages. Prior to the Company's operations, discussions between the cottagers and Company occurred during which the Company provided assurances that the roads would be returned to their original conditions following operations. After operations were completed the roads were not returned to a state which satisfied the cottagers. In response to initial expressions of dissatisfaction, the Company responded with an explanation of the maintenance activities it had undertaken and a statement that it believed it has met its obligations. Following a request by the cottagers for a compliance inspection, representatives from the Company and MNR met with the cottagers and additional maintenance activities were undertaken. The audit team drove on the roads in question and found them to be of good quality. All parties (cottagers, Company and MNR) are now satisfied with the condition of the roads.

3.5 SYSTEMS SUPPORT

3.5.1 Human Resources

Staff from Bowater and MNR assigned to the English River Forest during the review period were qualified given that they were trained, experienced, and able to complete the tasks at hand.

During the review period, Bowater's forest management staff were pooled into separate operations, geographic information systems, planning departments, which were supported by harvesting, road construction, silviculture, and planning contractors. For example planning contractors were used to prepare the annual reports, annual work schedules, prepare components of the FMP, develop yield curves, and serve as the plan author. Operations contractors also performed all harvesting, roads, and renewal operations.

Under this structure, staff resources were pooled to manage all five Bowater SFLs in Northwestern Ontario (Black Sturgeon, Caribou, Brightsand, English River, and Dog River/Matawin). The MNR district staff indicated that when there was an issue to be addressed on the English River Forest, it was not clear who was the main Bowater

contact person. The planning and fibre procurement manager was ultimately responsible for administering Bowater's SFL and legislative obligations under the former English River and Brightsand Forests.

Numerous planning delays have been noted in this audit report, including delays in annual reporting, delays in addressing required alterations for the 2003-04 AWSs, the delays in finalizing the planning inventory, the delays in approval of the 2004 English River FMP, and the need for the 2004-05 Contingency plan. These delays in meeting planning responsibilities lead the auditors to believe that there was a lack of capacity to perform the tasks at hand. These results clearly indicated that this staffing structure was not effective in meeting planning deadlines for a variety of reasons including:

- a lack of communication between MNR and Bowater early on in the development of specific products and between the Bowater departments and the contractors;
- bottlenecks in specific departments;
- Company staff had roles on the various SFLs, but no individual had ultimately responsibilities for the English River SFL;
- a propensity of the planning and fibre procurement manager to challenge MNR reviews, decisions, and direction as opposed to resolving issues and moving on;
- Company and MNR staff polarized based on their varying objectives; and
- inability of the planning team to resolve issues and make key decisions.

As described earlier, the Bowater plan author for the 2004-24 FMP and 2004-05 Contingency FMP/AWS was a consultant who was not fully empowered to make decisions on behalf of Bowater. Rather decisions that could potentially impact on wood supply were referred to the Manager of Planning and Fibre Procurement. Another weakness noted by the auditors for the 2004 FMP planning team, as described earlier, was the fact that the plan author only sat on two the minor task teams: the information centre and public consultation. The auditors could not rationalize how the plan author could direct the overall plan development without being directly involved in the activities of key task teams such as: timber allocation, wildlife, stakeholder, landbase information exchange, modeling, growth and yield, and silviculture. These concerns are addressed in earlier recommendations.

From a regional MNR perspective, the delays in the 2004-2024 English River FMP were related to new planning inventory requirements, and the challenging issues facing the planning team (i.e. marten cores, caribou mosaic and wood supply). As a result of the above, the planning team appeared to lose perspective at times, getting tied up in the Forest Information Manual interpretation conflicts.

As noted earlier, to the credit of the Company and local MNR, both parties have recognized the flaws in the planning process as it was implemented during the review period. During the summer of 2005 senior staff from the Company and MNR, working with their staffs developed detailed plans for addressing the problems with the last planning process. The Company and the Ministry are attempting to improve their rapport and implement the measures identified in the plans.

In addition, Bowater has recently re-organized to an east and west area-based structure where the west area staff are assigned directly to the management of the English River and Caribou Forests. Bowater has assigned a forester as its main contact on the

English River Forest for liaising with the MNR on forest management issues. Through the plans identified above, MNR and Bowater are working to improve their relationship moving forward. MNR and Bowater are attempting to develop the planning products by working more closely together to scope out the tasks, limit errors and omissions, and reduce unnecessary alterations. The auditors see these changes as being a very positive and necessary step in addressing the numerous past planning shortfalls.

The audit team recognizes the efforts which are beginning to be made by Bowater and the MNR to address the issues listed above. By way of entering these efforts into the record of this audit and to track progress made in implementing them, the following recommendation is provided.

Recommendation # 29

MNR and Bowater should continue to work at improving their relationship to improve the overall quality of management of the Forest.

Bowater's recent certification under the ISO 14001 and the Sustainable Forestry Initiative (SFI) have led to the development of an excellent training program led by the Contractor Systems Coordinator. The foundation for the training program is the Company's EMS, which outlines detailed work instructions for each specific forest management task. The EMS is on-line and includes digital links to all relevant legislation. Key elements of the EMS are contained in a concise employee handbook which is provided as a resource for field staff and contractors.

A "*Competence Training and Awareness*" work instruction outlines how training is conducted and which staff members are responsible for implementation. A detailed training matrix outlines all Bowater and contractor staff positions and the minimum training required for each of those positions. All Bowater and contractor staff receive training for their specific job. Training is delivered by Bowater and the contractors through their respective training, human resources or safety coordinators. Training occurs formally in the classroom and in the field.

A training course report records the courses and attendance information. This information is used to produce a training report for each Bowater and contractor employee, so that future training can be scheduled. Staff also receive operator cards, which are laminated one-page work instruction reminders for specific tasks. For example the feller-buncher operators receive an operator card outlining work instructions for retaining snags. Interviews with Bowater and contractor staff indicated that workers and supervisors receive appropriate training and are very familiar with their specific roles and responsibilities.

A number of FMP courses were offered by MNR Northwest Region (under the guidance/direction of the Forest Management Planning Section, which is the lead for FMP training) including: introduction to FMP, data preparation, operational planning, SFMMTOOL, developing objectives, silviculture ground rules, SFMM, analyzing management alternatives and the socio-economic impact model. Interviews indicated planning team members had attended all or a portion of the FMP training.

3.5.2 Documentation and Quality Control

In general a good document control procedure is in place for AWSs and FMPs. Once the AWS is approved, copies of the final AWS maps are produced and reviewed by a consultant hired by Bowater, to ensure that they follow the AWS and FMP. A review and sign off of the AWS map is conducted between the Bowater operations supervisor and the contractor supervisor prior to operations start-up. This allows the review of special prescriptions prior to implementation and allows the contractor and Bowater to review and discuss all aspects of each particular block. However, the overlapping licensee on the forest, Buchanan, indicated dissatisfaction with the quality of the maps provided by Bowater. This is discussed in more detail in Section 3.6.1.

During the audit period there were issues arising over tracking, submission, review and approval of FMP amendments and AWS revisions that are intended to be addressed by a new amendment protocol developed by the Dryden District MNR. All amendments and revisions were kept in a separate amendment or revision binder associated with the FMP or AWS. All tables and maps were dated with version numbers. When a new amendment was approved the old tables were discarded and replaced by the newest tables and text from the amendment. MNR and Bowater meet to periodically review their AWS and FMP copies to ensure they are up to date based on the amendments and revisions that have occurred.

The planning records were found to be very well organized at both the Bowater and MNR Ignace offices. The auditors could retrieve most planning documents, guidelines or policies on site with little effort. Bowater also maintains a master file of all planning documents in its Thunder Bay office.

3.6 MONITORING

3.6.1 General Monitoring

The Company's compliance planning consists of a five year compliance strategy included in the FMP and annual compliance plans included in the AWS. A monitoring section in the 2004 FMP provides a good description of the forest operations inspection program, the monitoring methods for silviculture exceptions and AOCs, and the program for assessing regeneration success as required by pages A-133 and A-134 of the 1996 FMPM. The MNR also prepares a separate five-year plan and annual compliance and enforcement plans. Bowater's compliance program is supported by a strong and complementary EMS and training programs.

In the past MNR and Bowater would meet annually to review compliance results and issues and this appeared to be a very effective tool in focusing the compliance program on continuous improvement. However, these annual compliance reviews have been curtailed of late due to the contingency plan and 2004 FMP planning priorities. Regular contact between the MNR compliance technician and Bowater staff now occurs instead.

Bowater submits monthly forecasts of active operations. Bowater meets with each contractor on an annual basis to complete a block-by-block review of the annual work schedule. This includes a review of all harvest, roads, AOCs and any block-specific

issues. Contractors are provided with a shape file for the layout blocks to facilitate the use of GPS technology while conducting operations. The annual fire plan is delivered to the Bowater staff and contractors in a similar fashion.

MNR compliance inspections are prioritized based on complaints, general trends from past operations, random inspections, contractor, priorities of other MNR staff, and values. The MNR compliance technician performs compliance inspections roughly one or two days every three weeks. Bowater provides SPOT satellite imagery in PDF format to MNR at no cost so MNR can perform remote compliance monitoring. The 2005-06 MNR compliance budget for the English River Forest, excluding staff costs, was limited to only \$3,500, and similar amounts were provided in previous years. The MNR compliance staff indicated that this was insufficient to satisfy MNR's compliance mandate, since this amount can be used up by a few long truck trips within the forest and one short 3 – 4 hour helicopter flight. MNR staff informed the audit team that additional compliance monies are "cobbled together" from other sources so that a reasonable level of compliance monitoring is possible in most years. Current compliance issues identified by MNR on the English River Forest were long butting, utilization, snag retention and AOC and harvest boundary trespasses.

The majority of the SFL compliance inspections are completed by Bowater contractors or by Buchanan Forest Products staff. Bowater operations and silviculture supervisors review and approve the contractor reports and occasionally complete inspections where non-compliances are noted for specific activities.

The annual reports provided a summary of the compliance inspections in tables AR-12.1 and AR-12.2. Annual Report table AR-12.1 provides summary results for the SFL compliance inspections, while AR-12.2 provides summary results for the MNR compliance inspections. The 2004-05 annual report information was only available in MNR's summary of compliance inspections as the 2004-05 annual report had not yet been filed by Bowater because it was not yet due at the time of the audit site visit.

The FOCIS system applied up until 2004-05 when the new FOIP system was introduced. MNR staff prepared a compliance inspection summary for each year which tracks all FOIP (formerly FOCIS) inspections including contractor, location, report date, report type, comments, action required, and follow up. The auditors noted that most of the earlier versions of the annual report compliance inspection summary (i.e. AR-12.1 and AR-12.2, and text) lacked specific details describing the specific non-compliances and action taken. The information provided described the type of inspections completed rather than the results of the inspections. Improvement was evident in the more recent compliance reporting.

There were a total of 1,775 compliance inspections during the 2000-05 audit period, with 1,289 completed by SFL contractors and 486 completed by the MNR (Table 18). The level of compliance inspection is quite high compared to other SFLs audited by the audit team. The year-to-year results showed a steady increase in SFL inspections, except for 2003-04. The MNR inspections were not consistent with only 20 in 2001-02 and 257 in 2002-03 and between 55 and 78 inspections in the other years. The audit team was informed that the 2004 FMP workload led to a reduction in compliance inspections in 2003-04.

There were 73 SFL-reported and 58 MNR-reported non-compliances for a total of 131

non-compliance reports during the audit period. The percentage of inspections by the SFL holder that were non-compliant was generally lower than the MNR non-compliance rates (Table 18). The average non-compliance rate for inspections performed by industry was 6%, compared to 12% for the MNR-completed inspections.

Table 18. Compliance inspections and non-compliances reported during the review period.

Year	# of Inspections			# Non-Compliances			% Non-Compliances		
	SFL	MNR	Total	SFL	MNR	Total	SFL	MNR	Total
2000-01	166	78	244	6	15	21	4%	19%	9%
2001-02	210	20	230	7	4	11	3%	20%	5%
2002-03	277	257	534	20	12	32	7%	5%	6%
2003-04	233	55	288	28	16	44	12%	29%	15%
2004-05	403	76	479	12	11	23	3%	14%	5%
Total	1,289	486	1,775	73	58	131	6%	12%	7%

There is an obvious disparity in the rates of reporting non-compliances by the SFL and MNR. Part of the explanation may be because MNR inspectors target known problem areas. Another reason the MNR reported non-compliance rates were higher could be due to the fact that the former FOCIS system could not differentiate between MNR and industry reports on the same site. Often, MNR verified an industry report of non-compliance by submitting an additional report of non-compliance from MNR. However, the audit team is concerned that there may be differing perceptions between Company and MNR inspectors regarding what situations warrant findings of non-compliance. This contributed to the need for Recommendation # 34.

The auditors noted that the quality of the Buchanan reports was very good, however, some of the Bowater contractor reports tended to report on the status of operational activities without examining and reporting on compliance issues. In some instances, a lack of compliance training, and the need for closer compliance surveillance by Bowater was noted by the audit team as a means of improving the quality of the compliance reporting. The activities of the Bowater field supervisors were not clearly identified in the compliance plans and FOIP reports. Interviews with Bowater field supervisors indicated that they take part in all compliance training, they review and sign off on the AWS map with the contractor prior to operations start-up, they provide regular on-site supervision, they complete joint inspections with contractors, and they review and approve all contractor compliance inspection reports. Although these activities suggest a reasonable level of involvement by Bowater in compliance monitoring activities, the fact that some contractor compliance reports are inadequate suggests the need for more rigorous oversight, as addressed in Recommendation # 31.

Auditor interviews indicated Bowater had three certified compliance inspectors and one certified reviewer and approver under the Forest Operations Inspection Program (FOIP) working on the English River Forest. The main contractors generally had one trained FOIP certified inspector with plans to certify additional inspectors.

Overall a good compliance system appears to be in place, and high level of monitoring is taking place.

Compliance Results

The auditors reviewed the latest year's results in detail. In 2004-05 there was a total of 403 SFL and 76 MNR inspections. There were a total of 299 harvesting and roads inspections by contractors including: 217 inspections completed by Marcri, 64 by Buchanan, 12 by Firesteel, and 6 by Upsula Forest Products. The remaining 104 compliance inspections were for renewal and maintenance operations that were all in compliance. There were a total of 12 harvesting and road non-compliances with two for Marcri, two for Upsula Forest Products, and eight for Buchanan. The Bowater harvesting contractor non-compliances were related to a push out into a stream, starting operations without approval, trespass into an AOC, and a cut boundary trespass. The Buchanan non-compliances were due to three bridge plans not in place, three related to lack of aggregate permits, one incorrect bridge construction, and one trespass into an AOC. The MNR inspections noted a total of 11 non-compliances, which was substantially higher rate than the SFL non-compliances, indicating, as noted above, a likely difference in perspective between the MNR and industry inspectors as to what instances or practices constitute as non-compliance. The MNR non-compliances were four for chip debris, one improper culvert, one trespass block boundary, two AOC trespasses and three related to gravel permits.

The annual reports do not provide much information on compliance issues. They have tended to report only rudimentary compliance results such as the number of inspections and number of non-compliances, without providing detail on trends, or issues.

A key area of improvement for the compliance program is to incorporate the past compliance results into the annual compliance plans and five year compliance strategies to help focus on continuous compliance improvement. The five year compliance strategies should review and assess the past five years compliance results and set appropriate compliance targets. The annual compliance plans should review the past years compliance results in order to set priorities for the current year.

The following compliance issues were noted by the auditors:

- Bowater was not reporting non-compliances within required timeframes. For example, some trespass non-compliances were not reported for one or two years after operations were completed (e.g. Kay Lake Block #15 cut into Osprey AOC in 2000-01 AWS was not reported until March 15, 2002).
- Unwarranted delays in action for compliance issues and non-compliances. Bowater did not address all non-compliances as agreed in a timely manner. Some non-compliance remediation work remained outstanding 1 to 2 years later (e.g. compliance order issued in June 2002 for the Kabikabik Creek washout of Amik Road was not addressed as of Nov 20, 2003, and Parkview culvert was reported plugged in Nov 2001, but not repaired until July 10, 2002. On Silver Dollar Blocks #61 and #62, the Company reported that plugged culvert on Jan 21, 2002, but it was not repaired as of July 24, 2002).
- MNR is in some instances facilitating lack of action by Bowater by not taking measures to encourage or require the company to address non-compliance issues;
- Block boundary trespasses occur relatively often. Bowater is trying to address this by using GPS technology, but trespasses are still occurring fairly frequently;
- There was no substantive discussion of compliance issues and Bowater action for continuous compliance improvement in the annual reports, annual compliance plan

- or five-year compliance strategy; and,
- Comprehensive compliance-related text and summaries be included in the annual reports.

The following recommendations and suggestions are made to improve the compliance program:

Recommendation # 30

Corporate MNR should provide financial resources sufficient to address its compliance mandate.

Recommendation # 31

The Company should include a comprehensive description of the strategies used by its on-site supervisors to monitor contractor compliance in the annual compliance plans. Bowater field supervisors should add comments to the review and approval section of compliance reports that outline their compliance activities (approved map sign off, regular on-site supervision, joint inspections, etc.) when approving contractor reports.

Recommendation # 32

The Company should report all non-compliances according to the required timelines outlined in the compliance guidelines and compliance plans. The Company should take prompt action in addressing non-compliance issues and compliance orders as agreed to with the MNR.

Recommendation # 33

The Company should provide a detailed review and analysis of the past compliance results in the annual reports. The annual reports should also document the Company's progress in taking action to address non-compliance issues and compliance orders.

Recommendation # 34

The Company and MNR staff should meet annually to review the previous year's compliance results and develop compliance priorities for the current year's Annual Work Schedule. The analysis of past compliance history should also be reflected in the compliance strategies and targets in the annual compliance and five year compliance strategies.

Silviculture Compliance

In general, the compliance record of the Company for renewal operations was good. However, in the year 2003/04, there were four non-compliances related to renewal operations. Three of these were for site preparation (in all cases the operator started in the wrong block, in areas that were not included in the AWS nor FMP), and there was a similar non-compliance for a thinning project. The instances appear to be related to a combination of mapping errors and poor communication between Bowater and its silvicultural contractors.

Bowater explained that for its harvest operations, a "harvest sign-off" map has been implemented as part of their EMS to eliminate these types of issues. This has worked well for some harvest operations. Bowater stated that a similar silvicultural "sign-off map" will be implemented prior to conducting any silviculture activities. The work instruction and product are not yet in place but are expected to be for operations to be conducted next year (2006-2007).

Silvicultural Effectiveness Monitoring

Bowater has implemented a comprehensive program of surveys for the assessment of silvicultural treatment requirements and silvicultural effectiveness. These surveys are conducted at various stages in the management of areas allocated for harvesting, and include:

- Pre-harvest assessments, which are used to identify the potential for natural regeneration;
- Post-harvest assessments, which are used in silvicultural prescription development - information from the post-harvest assessments are used to develop or refine Forest Operation Prescriptions (FOPs) which are included in the Annual Work Schedules;
- Vegetation management needs assessment, which is used to assess the need for tending activities; and
- Regeneration Condition Surveys, which are conducted 3 years after treatment, to determine the need for any follow-up treatments, such as fill planting and tending.

The above survey information is reviewed and validated by Bowater's silvicultural forester. Information appropriate for FOP development is entered into Bowater's silvicultural information system, and is then available for use in AWS production, and for operational scheduling of future survey and silvicultural activities. The free-to-grow survey is the final stage in the monitoring of the outcome of silvicultural activities implemented on a managed area.

This silvicultural monitoring program is a commendable initiative by Bowater, and represents a significant improvement in the monitoring program since the previous IFA assessments.

Bowater uses its silvicultural record keeping system ("Woodlands – the System") for tracking silvicultural treatments, SEM information, and free-to-grow assessment results. The system is integrated with the Company's GIS and provides an effective means of conducting inventory updates. The Company is presently conducting inventory updates on an annual basis.

Silvicultural monitoring information is used for Company operational planning but in our opinion could be better integrated with FMP preparation. For example, a matrix of success rates of treatment packages and intensity levels could be prepared by Forest Unit to evaluate the appropriateness of silvicultural treatments on different site conditions and to verify the successional rules used in modeling.

Suggestion # 7

The Company should develop tools to better integrate silvicultural monitoring information into the preparation of future FMPs.

Free-to-Grow Assessments

During the audit period Bowater completed free-to-grow assessments for an area of 48,901 ha. We reviewed a sample of approximately 12% of these sites (5,640 ha). On all areas we confirmed the free-to-grow status, and our observations were substantially in agreement with the documentation of the assessments provided to us by Bowater. The burned areas from the 1996 and 1998 wildfires appear to be regenerating very well. In general, on both forests we observed many well-stocked young areas (1-30 years of age) and few areas that appeared to be Not Satisfactorily Regenerated (NSR).

For the 1999-2004 FMP term for the Brightsand Forest, 53,158 ha of free-to-grow assessments were conducted, or 72% of the forecast level. For the 2000-2005 FMP term for the former English River Forest, 15,943 ha of free-to-grow assessments were conducted, or 49% of the forecast level. In the case of the former English River Forest the percentage achieved has been pro-rated to account for the shortened four-year FMP term.

Based on the amount of area listed in the depleted category in Table FMP-1 in the 2004-2009 FMP, it appears that much of the backlog area requiring free-to-grow surveys that was referred to in the previous IFA reports for the two forests has been addressed. It is difficult to determine the amount of remaining backlog area, since free-to-grow surveys conducted in the final year of the audit period (2004/05) have not yet been reported on; also, harvest depletions for the years 2002-2005 were projected from planned levels during the inventory update process in preparation of the 2004-2009 FMP, and these were not achieved as planned. Thus, some of the harvest depletions indicated in FMP-1 did not actually occur. Based on the available information on actual harvest and natural depletions, and the area of free-to-grow surveys conducted since the update process, we estimate that approximately 11,000 ha of backlog areas requiring free-to-grow surveys remains in the inventory. Any remaining backlog area should be dealt with in the current FMP term to keep the inventory as up to date as possible.

Recommendation # 35

The Company should identify any remaining backlog area requiring free-to-grow assessment and ensure that these sites are scheduled for the appropriate surveys during the current FMP term (2004-2009).

3.6.2 Annual Reports

Annual reports are primarily prepared by the SFL-holder to report on the implementation of the forest management plan. The MNR District provides specific sections of the annual report including MNR compliance and a description of the progress towards providing socio-economic development opportunities for First Nations (i.e. Condition 34 of Class Environmental Assessment Declaration Order).

The annual report serves to describe the operations that were conducted during the year, compare the planned and actual operations results, and describes the implication of the results in terms of future planning forecasts. Annual reporting requirements

changed during the audit period. For the first four years of the audit period, a spring submission due on April 15 provided the silvicultural information and a fall submission due November 15 provided the harvesting information for the previous year. Starting with the 2004-05 year, as the 2004 FMPM took effect, only one annual report submission is required by November 15th.

A total of 8 annual reports reported on activities that occurred during the audit period:

- 2000-01 former English River
- 2001-02 former English River
- 2002-03 former English River
- 2003-04 former English River
- 2000-01 Brightsand
- 2001-02 Brightsand
- 2002-03 Brightsand
- 2003-04 Brightsand

Table 19 provides a summary of the annual report submission, review and approval dates. The submission dates were taken from the annual report cover page or a cover letter, the MNR review completion date was taken from the MNR review cover letter and the final submission date was taken from Bowater's annual report re-submission cover page. The MNR did not track the annual report submission, review, re-submission and approval dates. The exact submission dates for the 2001-02 and 2002-03 annual reports did not appear to be correct as the date on the annual report cover page was the only reference. These dates were not considered to be accurate as the audit team found several instances where the AWS submission dates on the approval pages reflected the date of the initial draft submission and not the date of the final submission. The MNR Area Forester indicated that the 2001-02 and 2002-03 annual reports were both over a year late.

Table 19. Summary of Annual Report submission, review and acceptance dates.

Annual Report	Due Date	Submission Date	MNR Review Complete	Final Submission Date	Accepted
2000-01 BS spring	April 15, 2001	April 26, 2001	June 1, 2001	Sept. 7, 2001	Sept. 10, 2001
2000-01 ER spring	April 15, 2001	April 24, 2001	May 28, 2001	July 26, 2001	Sept. 11, 2001
2000-01 BS fall	Nov. 15, 2001	Nov. 15, 2001	Dec 18, 2001	Jan 22, 2002	Feb 19, 2002
2000-01 ER fall	Nov. 15, 2001	Nov 15, 2001	Dec 21, 2001	Jan 22, 2002	Feb 19, 2002
2001-02 BS spring	April 15, 2002	April 23, 2002	Jan 19, 2004	Sept 7, 2004	Jan 19, 2004
2001-02 ER spring	April 15, 2002	April 15, 2002	Jan 19, 2004	Oct 14, 2004	Jan 19, 2004
2001-02 BS fall	Nov. 15, 2002	Nov 19, 2002	Jan 19, 2004	August 11, 2004	Jan 19, 2004
2001-02 ER fall	Nov. 15, 2002	Nov 19, 2002	Jan 19, 2004	Sept 1, 2004	Jan 19, 2004
2002-03 BS spring	April 15, 2003	April 17, 2003	Jan 19, 2004	Oct 5, 2004	Jan 19, 2004
2002-03 ER spring	April 15, 2003	April 17, 2003	Jan 19, 2004	Nov 22, 2004	Jan 19, 2004
2002-03 BS fall	Nov. 15, 2003	Nov 17, 2003	Jan 19, 2004	August 12, 2004	Jan 19, 2004
2002-03 ER fall	Nov. 15, 2003	Nov 18, 2003	Jan 19, 2004	Nov 18, 2004	Jan 19, 2004

Annual Report	Due Date	Submission Date	MNR Review Complete	Final Submission Date	Accepted
2003-04 ER spring	April 15, 2004	July 25, 2005*	na	na	na
2003-04 BS spring	April 15, 2004	July 25, 2005*	na	na	na
2003-04 BS fall	Nov. 15, 2004	July 25, 2005*	na	na	na
2003-04 ER fall	Nov. 15, 2004	July 25, 2005*	na	na	na
2004-05 ER spring and fall	Nov. 15, 2005	Not Completed	na	na	na

* - preliminary draft provided to the audit team

During the audit period, MNR reviewed the Bowater annual report submissions and developed a list of alterations that needed to be addressed to meet the FMPM requirements. The MNR then accepted the annual reports with qualifications attached (i.e. the alterations) that needed to be addressed. This is reflected in Table 19 in that the dates for acceptance of many annual reports is prior to their final submission by the Company. Bowater normally addressed the alterations and submitted a revised annual report that was reviewed against the alterations by MNR.

Based on the information available to the auditors, the 2000-01 annual report submissions were on-time or at most, no more than two weeks later than the April 15th and November 15th due dates. The MNR review was completed shortly after receipt and Bowater addressed the alterations and re-submitted the final versions that were accepted by MNR. For the 2001-02 and 2002-03 annual reports, the dates on the annual report cover pages indicated that the submission deadlines were met, however interviews with MNR staff indicated that the submission dates on the cover pages were in error and that the annual reports were submitted late. MNR reviews did not occur until January of 2004 and the subsequent re-submissions were provided several months later in the fall of 2004. There were no records to indicate that MNR accepted the final annual report submissions for 2001-02 and 2002-03.

An "Annual Report Preparation and Review Protocol – Fall 2005" was developed by MNR to outline the new annual reporting requirements according to the 2004 FMPM and 2001 FIM. A December 1, 2004 memo from the Director, Forest Management Branch indicated that both the Brightsand and English River Forest were required to have the 2003-04 annual report component submitted by November 15, 2004 and the additional 10-year report component submitted by February 15, 2005 and these were going to be reviewed by MNR.

As described earlier, the Brightsand Forest had a 1999-04 FMP that was fully implemented and the English River Forest had a 2000-05 FMP that was implemented for the 2000-04 period and superceded by the 2004-09 FMP for the amalgamated English River Forest. Therefore, the company was required to submit the 2003-04 annual reports according to the new format and requirements. The November 15, 2004 submission was expected to include AR-1 to AR-14 tables and maps in the new format with the 2003-04 figures for both forests. The February 15, 2005 submission was to include the 1999-04 or 2000-04 to-date figures in the AR-1 to AR-14, 10 year maps, completed RPFO-13 to RPFO-18 tables and assessments of forest sustainability and objective achievement.

The Company submitted "draft for independent forest audit purposes" versions of the 2003-04 spring and fall annual reports on July 25, 2005 well over a year late. These annual reports have not yet been reviewed by the MNR. These annual reports followed the old 1996 FMPM table format with to-date columns added and they do not meet the current requirements. Most of the 10 year reporting requirements were not met.

During the audit period, the MNR used an annual report review checklist, however through it, the annual report submission, review, and approval process was not clearly documented. MNR has since revised the process for annual report review, and it is now tracked officially through its on-line FIP portal. This process should address the shortcomings of the previous checklist system.

The auditors noted several content issues with the annual reports during the audit period. The same annual report text was used year after year, only the quantities referenced in the text appeared to change. While there are elements of efficiency in making use of components of past reports, in general there is a lack of adequate discussion of the annual report components. There was little effort directed to describing in-year variances related to planned vs. actual operations and other issues, and an absence of text describing the implications of activities in terms of future planning forecasts. The auditors were perplexed by the fact that subsequent annual reports were often not adjusted in light of the past years' review comments provided by the MNR. This problem is also highlighted by the fact that the MNR review comments were almost identical year after year. Often, Bowater failed to address some MNR review comments or took up to two years to address them.

There were numerous instances of incorrect and substandard text and tables. Issues included limited and missing text, incorrect or missing tables and missing maps and digital layers. Some of the AR tables had the previous year's date and often the cover pages and submission letters did not have the correct dates leading to confusion as to submission and approval dates. Bowater could not produce map products related to required alterations "due to the late timeframe of the Annual Reports" (In other words, the Company could not reproduce "old" maps at a later date to comply with MNR's required alterations). The silviculture treatment prescriptions were not identified correctly and there were variances between the tables and digital map information.

Additional shortcomings include that the native socio-economic opportunities text was missing or lacking in many cases. The MNR compliance table and text were missing from the 2001-02 Brightsand, 2001-02 English River, and 2002-03 Brightsand annual reports. This was noted as an issue with an associated recommendation in the 2000 independent Forest Audit for the English River Forest, but has not been completely addressed.

As noted earlier, the compliance text was one area where the auditors felt the Company could have focused more effort. There was a lack of detailed reporting and discussion of annual compliance performance. The compliance discussion failed to outline the specific compliance results and future risks and priorities, as the report is designed to do. The following recommendations and suggestion are made to improve annual reporting performance.

Recommendation # 36

The Company should ensure that the final submission date appears on the approval pages of the FMP, AWS's and Annual Reports.

Recommendation # 37

By March 31, 2006, the MNR and Bowater shall review the status of the 2001-02, 2002-03, 2003-04 and 2004-05 annual reports and identify a schedule for their completion.

MNR Oversight of Annual Reports

On December 1, 2004, MNR issued direction to waive the District requirement to review all annual report submissions. Instead, MNR will review the more comprehensive ARs that are produced at the end of years 3, 7, and 10 in the plan period, while review of ARs produced in other years is at the discretion of the District. A recent MNR document²⁴ providing direction on annual reports and MNR's review obligations notes that "workload priority issues may impact on the level of AR review that MNR can undertake", and so identifies some voluntary measures which districts may wish to use in reviewing annual reports (other than the year 3, 7 and 10 ARs). They include: ensuring that all required components have been submitted, reviewing the synopsis of the report, and conducting spot-checks of data in required tables. We do not believe that these, nor the similar measures identified in the MNR document will provide any meaningful quality control to the annual reports.

Each year, for due diligence, MNR will only review in detail a sample of "regular" Annual Report submissions (a minimum of two from the Northeast Region, two from the Northwest Region and one from the Southern Region). Other reports are to be accepted as submitted and the onus is to be placed on the AR author and the RPF who stamps the reports to ensure that the content is correct. As noted above, MNR districts are not required to review the reports.

As noted in the MNR document, the intent of this change in direction is to free up MNR staff time. The Audit Team has, in previous audits, found that sometimes the MNR staff do the work of the Company in correcting the very rough draft AR's that are submitted. However, the Audit Team feels that there are other solutions available to remedy this problem, such as conducting an initial check and sending the AR back to the Company without detailed review if it is of poor quality. In most cases, the mistakes that are made in the AR's are honest mistakes that are made in the course of compiling a complex report, and it is unreasonable to expect that the reports will be error-free. We note that the audit reports go through two draft stages before the final reports are produced – this is an accepted and normal mechanism for quality control in all professions.

The Audit Team feels that, while the direction may be consistent with new FMPM (2004) minimum requirements, it will inevitably lead to cascading errors that will become evident when the major AR reports are submitted (comprehensive AR's are required at 3 and 7 years into the plan period and MNR District staff are required to review these) and will be all the more time-consuming and difficult to correct when they are finally caught. The

²⁴ Ontario Ministry of Natural Resources. Annual Report Preparation and Review Protocol - Fall 2005

end result may not be a time-saving and in the meantime, the risk of erroneous public documents being available will rise.

Recommendation # 38

The audit team strongly recommends that Corporate MNR revise the 2004 FMPM to require MNR review of all annual reports and consider alternate ways to handle relevant workload issues.

3.6.3 Report of Past Forest Operations

Two Reports of Past Forest Operations were produced in support of the 2004 English River FMP, one of which pertained to the former Brightsand Forest and covered the period between 1994 and 1999, and the second which pertained to the former English River Forest and covered the period between 1995 and 2000. Both RPFOs were produced under the requirements of the 1996 FMPM and, with the minor exceptions noted below, met those requirements.

The following minor content issues were identified in the Brightsand RPFO:

- There is no RPFO-4 salvage table but there was 1763 ha of salvage conducted during the period (RPFO-3s);
- RPFO-6 is supposed to show commitment volumes, and actual deliveries, and also the planned versus actual volumes. Planned versus actual could have been summarized by licensee/company;
- RPFO-9 is blank; and
- RPFO-11 is not completed. There is a note that no data was available for the period of 1994-1997 and that provision of partial information is not available.

The following minor content issues were identified in the English River RPFO:

- RPFO-6 is supposed to show commitment volumes, and actual deliveries, and also the planned versus actual. Planned versus actual could have been summarized by licensee/company;
- RPFO-9 is missing; and
- Volume harvest data in RPFO-4 and RPFO-11 do not match.

The Brightsand RPFO does not assess the achievement of plan objectives, other than to indicate that while the actual harvest was below the planned level, this indicates that mill demand was satisfied. The RPFO states that the objectives in the 1994 TMP do not have associated targets and are not readily assessable. The English River RPFO does discuss each objective, including the qualitative ones, and presents information that demonstrates that the objectives were essentially achieved.

Both RPFOs discuss the transition from the use of area-based regulation to volume-based harvest and wood supply projection, and the associated change from an oldest-first harvest to one that is not defined by a simple heuristic. The Brightsand RPFO notes that the imposition of the caribou mosaic conserves older forest while the Company has been trying to harvest older forest to better balance the age classes and capture old volume before it deteriorates. The Brightsand RPFO extends the hope that the age

class gap in the 40 and 60-year age classes may be partially an artefact of the old inventory, and that a new inventory might indicate that the problem is less severe.

The English River RPFO presents a useful list of conclusions and recommendations, whereas the Brightsand RPFO discusses conclusions in more general terms and does not include any recommendations.

3.7 ACHIEVEMENT OF MANAGEMENT OBJECTIVES AND FOREST SUSTAINABILITY

The IFAPP directs the Audit Team to assess the sustainability of forest management using a methodology described in the IFAPP. The IFAPP states that "Compliance with the applicable criteria [of the IFAPP] will determine whether the forest unit complies with the general principle of forest sustainability". The field observations of the Audit Team are also to be considered in assessing sustainability. Section 3.7.1 assesses the extent to which the objectives of the three FMPs under review have been/are being met. Sections 3.7.2 and 3.7.3 review the information in the Comparison and Trend Analysis and RPFO, respectively, while section 3.7.4 presents our conclusions regarding sustainability.

3.7.1 Achievement of Management Objectives

Tables 20 and 21 assess the extent to which the management objectives of the 1999 Brightsand and 2000 former English River FMPs were met. Table 22 provides the audit team's assessment of progress made in meeting the objectives of the 2004 FMP. As the 2004 FMP has only been implemented for about 18 months (and in fact was only approved in February 2005), the assessments made must be viewed as preliminary.

Table 20. The Audit Team's Assessment of the Achievement of the Objectives of the 1999-2004 Brightsand Forest Management Plan.

Objective/Targets	Achievements	Notes
Forest Diversity Objectives		
Biodiversity: To maintain long-term forest diversity through sustainable forest management practices. Target: To maintain appropriate levels of forest diversity indices and indicators of sustainability within the range of natural variation (null scenario – no human intervention)	Tables FMP-4 and FMP-12 of the 1999 Brightsand and 2004 English River FMPs show that diversity values are projected to be maintained within the range of natural variation.	
Environmental Protection: To protect sites from potential environmental degradation from forest operations. Target: To minimize environmental	AOC prescriptions in the 1999 Brightsand and 2004 English River FMPs are well considered and provide protection for sites. There was little/no evidence of site damage noted in the audit's field	

Objective/Targets	Achievements	Notes
degradation from forest operations	inspections	
Red and White Pine Ecosystems: To ensure that red/white pine ecosystems, including old-growth stands are present on the landscape Target: To maintain or increase the area of red pine and white pine forest units	Table FMP-12 of the 1999 Brightsand and 2004 English River Plans forecast this target to be met in the long term.	
Social and Economic Matters Objectives		
Timber Supply: To provide a sustainable, efficient and economical supply of timber to the local forest industry and to promote optimal utilization of the available wood products. Targets: - Supply of sawlogs to Buchanan mills with residual chips delivered to the Bowater Thunder Bay mill complex as follows: - Softwood: 1.9Mm3 - Hardwood 0.385Mm3	The planned softwood harvest volume, at 1.45 million m3, was below the target level. Actual softwood volume harvest was 89% of planned, or 1.28 million m3. Chips were supplied to the Bowater mill complex. The planned hardwood harvest was 372,000 m3, which was 97% of the target. Of this, only 40% was actually harvested.	Given that the softwood harvest is expected to decline by more than 50% in the next twenty year period (FMP-12), and not recover to current levels until 2079, the softwood volume target is unattainable.
Local Employment: To make available local employment opportunities in the forest industry. Target: To maintain and develop local jobs in Upsala, Graham, Savant Lake, Ignace, Sioux Lookout and Thunder Bay communities.	The timber harvested on the forest is cut by Buchanan contractors living in local communities, and it is processed in mills in Thunder Bay and Sapawe. Since the mills received close to the planned level of volume, and approximately half of this volume, in the form of chips, was used by Bowater's Thunder Bay mill, the objective was satisfied.	
Age Class Imbalance: To minimize the impacts of the age class imbalance existing in all forest units in the 40-60 year age class. Target: To provide a predictable, continuous flow of fibre from the Brightsand Forest over the long term, despite the projected shortage in 40-60 years time.	Table FMP-12 shows that the planned softwood harvest will decline by more than 50% in twenty years, compared with current levels. The harvest is not scheduled to recover until 2079.	By being unable to undertake any of the scheduled pre-commercial thinning, the window of opportunity for alleviating the decline closed further during the plan period.
Wood Flow: To provide a continuous and predictable flow of wood products to the designated mills. Target: To plan for a relatively even flow of wood throughout planning terms and throughout harvest seasons	Given the substantial projected decline in the softwood harvest, the target seems unrealistic.	

Objective/Targets	Achievements	Notes
for forest operations. Strategies must be consistent with the protection of non-timber values, including caribou habitat.		
Incidental Volumes: To make available incidental volumes of timber for such uses as firewood, building logs, fence posts and other materials for personal use available to local users. Target: • Since demand is difficult to predict and varies considerably over time, specific quantifiable targets have not been set for this objective.	This was done	
Native Communities: To work with local native communities to identify and implement ways for native people to realize increased benefits from the forest. Target: • To maintain open communication with representatives of local native communities regularly.	As outlined in Section 3.2.3 Bowater continues to make earnest efforts to involve First Nations in management of the Forest. Success with the Lac des Mille Lacs First Nation and Wabigoon Lake Ojibway First Nation are evident. The Company's efforts to engage the Ojibway Nation of Saugeen are as sincere, but results have not been as prominent.	
Mining and Mineral Exploration: To maintain mining and mineral exploration opportunities on the Brightsand Forest. Target: • To maintain existing road access and consult with the mining and mineral exploration industry when planning roads and harvesting operations.	There have been no issues regarding road access raised by members of the mining and mineral exploration issue. MNR staff believe this objective has been met.	
Salvage Operations: To salvage timber from natural disturbance events. Target: • To promptly assess every significant natural disturbance event for economical timber salvage opportunities to minimize loss of merchantable timber.	In 2000/01, 200 ha of salvage harvesting took place on the Forest. This was the only salvage harvesting undertaken during the audit period and reflected a low level of loss due to natural disturbance during the period.	
Provision of Forest Cover Objectives		
Woodland Caribou: To maintain the presence of woodland caribou by developing a forest landscape pattern that will ensure a suitable and sustainable year-round caribou habitat	A forest harvesting mosaic was implemented in all the plans considered in this audit. The 2004 FMP projects that caribou winter habitat will decline by 22% by the	Section 3.4.6 of this report identifies the audit team's concerns with old growth and caribou management.

Objective/Targets	Achievements	Notes
supply, distributed both temporally and geographically over the landscape. Target: Maintain continuous range occupancy (i.e. caribou will continue to use the habitat south to the Caribou line).	DFFC and by 33% by 2104. These levels of decline may provide for continued range occupancy.	Recommendation # 8 directs the MNR to provide guidance on caribou management south of the caribou line and Recommendation # 9 directs the MNR and Company form a task team to provide more strategic direction on management of caribou and marten on the forest to provide a stronger basis for their continued existence there.
Marten: To maintain a forest landscape pattern that will supply suitable habitat for marten over time and within the bounds of natural variation (Null scenario- no human intervention). Target: Maintain a landscape composition and structure suitable for the maintenance of healthy marten populations, as described in the Forest Management Guidelines for the Provision of Marten Habitat, while maintaining wood supply requirements.	The provincial marten guidelines were used in developing core areas in the 1999 Brightsand and 2004 English River Plans. The lack of unfragmented, suitable mature forest made the identification of core areas difficult. did not leave room to explore many options for the planning team. The SFMM habitat model for the 2004 FMPM projects a decline in marten habitat of 43% for the English River Forest at the DFFC. This level is below the lowest every reached in the SFMM benchmark run, but above the MNR-deemed minimum acceptable level.	Although the target is achieved, the audit team has concerns that the lower bounds of the acceptable range are inappropriate and has made Recommendation # 5 to corporate MNR to revise the direction provided to planning teams regarding the minimum acceptable amounts of wildlife habitat.
Eagles, Osprey, and Heron: To protect forest cover that is currently used as critical habitat by eagles, osprey and heron Target: No loss of current critical nesting habitat as a direct result of forest management activities	The 2004 FMPM contains 11 different AOC prescriptions for protection of stick-nests. These do a good job of protecting nests and nesting habitat.	
Moose: To maintain a forest landscape pattern that will supply suitable habitat for moose over time. Target: Maintain moose habitat outside the caribou habitat mosaic area.	The 1999 Brightsand FMP employed aspects of the moose guidelines. The SFMM habitat modelling in the 2004 FMPM projects a decline in moose foraging habitat by 20% at the DFFC compared to present levels, however the winter habitat is projected to increase.	Moose are resilient animals. The projected decline in moose foraging habitat is not expected to affect the population of moose on the forest.
Tourism: To plan, implement and	The Company was pro-active in	

Objective/Targets	Achievements	Notes
monitor forest operations in a manner that maintains the economic viability of the resource-based tourism industry established on the Brightsand Forest. Target: • Meet the spirit and intent of the resource-based tourism policy and thereby ensure no tourism business is jeopardized due to forest operations.	dealing with remote tourism operators and implemented measures, such as road removal, to help safeguard the remoteness of lodges and camps.	
Commercial Non-Timber Harvest Operations: To maintain or enhance commercial resource-based non-timber harvest operations. Target: • Maintain or enhance current levels of opportunity for non-commercial non-timber harvest operations (i.e. Baitfish, bear hunting, berry picking, trapping, ecotours)	Company operations did not appear to have a noticeable impact on the level of non-timber use, although there was little monitoring of impacts or harvest levels for such products as berries.	
Silviculture Objectives		
Forest Productivity: To maintain the long-term productivity of the forest through harvesting, renewal, protection, access and stand maintenance in an environmentally sound manner, while maintaining the ecological diversity of the landscape. Target: • Maintain the managed Crown forest available for timber production and keep the inventory as current as possible.	In general, the field assessments conducted during the audit indicated good effectiveness of the silvicultural treatments that had been implemented. We also noted considerable natural ingress on the forest units that were identified in the FMP as appropriate for natural regeneration. For the 1999-2004 FMP term, 96% of the forecast artificial regeneration program, and 83% of the natural regeneration program were achieved. The shortfall in natural regeneration is mainly related to tracking reporting issues. Bowater has implemented an improved silvicultural record-keeping system and conducts inventory updates annually.	
Sawlog Production: To maintain sawlog production. Target: • Maintain most (80% to 100%) of the stocked stands at the free-to-grow stage.	During the audit period Bowater completed 53,158 ha of free-to-grow assessments, which has eliminated much of the backlog free-to-grow area. Approximately 5,000 ha of pre-1996 treated and naturally regenerating area remains on the Forest. During the 1999-2004 FMP term,	The lack of implementation of the pre-commercial thinning program will likely maintain the sawlog proportion of the timber in these stands, similar to the unmanaged forest, but will not enhance the

Objective/Targets	Achievements	Notes
	none of the planned pre-commercial thinning program (8,000 ha) was implemented due to the unavailability of associated research funds.	sawlog potential.
Efficient Renewal Program: To ensure the renewal program is efficient and economical. Target: To choose silvicultural strategies that keep expenditures in line with accruals in the Forest Renewal Trust Fund for the Brightsand Forest.	Throughout the audit period renewal rates have been maintained within the limits identified in the FMP. Based on our review of the rate of expenditures from the Forest Renewal Trust, and the balances that have been carried during the audit period, the renewal rates appear to be appropriate. Bowater has incorporated an increased consideration of natural ingress into its silvicultural prescriptions, which is supported by a monitoring program for silvicultural effectiveness of these treatments prior to the free-to-grow stage. This should help to ensure that silvicultural dollars are directed to the most appropriate sites.	

Table 21. The Audit Team's Assessment of the Achievement of the Objectives of the 2000-2005 former English River Forest Management Plan.

Objective/Targets	Achievements	Notes
Forest Diversity Objectives		
There are no specific silviculture objectives. The plan states that: "...forest diversity and silviculture cannot be assessed in isolation but will be related to the specific management objectives under [social and economic objectives and the management of forest cover objectives]."		
Social and Economic Matters Objectives		
Forest Industry: To provide a sustainable, economical supply of timber to the local forest industry in Thunder Bay, Ignace, and Sioux Lookout, acquired through environmentally sound practices. Targets: Conifer	Total planned volume of conifer provided during the five year plan period was 3.15 million m ³ ; during the first four years of the period, 2.43 million m ³ was harvested. Had this actual harvest rate continued for the full five year period, a total of 3.04 million m ³ would have been obtained, close to the target.	

Objective/Targets	Achievements	Notes
• Bowater - 730,000m3 • Abitibi Consolidated: 70,000 me • Mackenzie FP: 750,000 m3 • Atikokan FP: 750,000 m3: • Ignace Saw: 850,000 m3 • Hardwoods: • Bowater: 400,000 m3 • Columbia FP: 100,000 m3 • Weyerhaeuser: 500,000 m3 • Encourage opportunities for local employment in forest management; • Encourage sorting of wood for best end use • Conduct reinventory of the forest resource in the English River Forest; • Ensure that silvicultural expenditures do not exceed revenues to the English River Forest Renewal Trust Fund	However, the Audit Team was informed that the fifth year volume was not economically accessible, which suggests that a lower level of achievement would have ensued. The conifer-receiving companies had no complaints about the volumes received. Hardwood harvest volumes were low, with 67% of planned harvest achieved, after adjustment for the four-year period. Weyerhaeuser felt that the relationship was working well; Columbia did not meet the pre-conditions for them to receive hardwood volume. As discussed in 3.3.1, the new inventory created many problems for the planning team. Re-inventory completed 2000 as per FRI discussion in Section 3.3.3 Silvicultural expenditures did not exceed revenues during the audit period and the required minimum balance requirements of the Forest Renewal Trust Fund were met.	
Personal Use of Forest Products Objective: To make available incidental volumes of timber for such uses as fuelwood, building logs, fence posts and timber for other personal use. Target: • Make area available with the English River Forest allocations for personal timber harvesting (Red and white pine - 4.7 ha; cedar 60 ha).	Identified volumes have been made available.	
Other Commercial Use Objective: To conduct forest operations in a manner that considers and respects the other businesses that are located on, or utilize resources within, the English River Forest. Targets: • Consult and work with all the identified businesses that utilize the English River Forest during	The Audit Team did not detect any notable instances where the activities of the Company led to conflicts with other forest users.	

Objective/Targets	Achievements	Notes
plan development and during preparation of any related amendments to the plan during the five year term. • Meet all conditions within any currently negotiated agreements and planning prescriptions respective to other commercial uses on the English River Forest.		
Forest Nations Involvement Objective: To work with First Nations communities to identify and implement ways to maintain and enhance the inherent social and economic benefits to Native peoples who traditionally use the forest for subsistence and spiritual value. Targets: • Identify activities for First Nations forest management contract opportunities in accordance with Term and Condition #77, E.A. Decision) • Communicate with representatives of the Saugeen and Wabigoon First Nations • Implement the Native Consultation Process as requested • Develop Native Information Background Report • Develop Report on the Protection of Identified Native Values	As outlined in Section 3.2.3 Bowater continues to make earnest efforts to involve First Nations in management of the Forest. Success with the Lac des Mille Lacs First Nation and Wabigoon Lake Ojibway First Nation are evident. The Company's efforts to engage the Ojibway Nation of Saugeen are as sincere, but results have not been as prominent. Required reports have been produced.	
Private Property and Other Land User Values Objective: To conduct forestry operations in a manner that protects private property and other identified land use values within the English River Forest. Targets: • Plan and implement forestry operations so that no private property is encroached upon without prior agreement with the landholder • Implement the area of concern planning process to ensure that other land use values are not negatively impacted by forest management activities.	The Audit Team did not detect any notable instances where the activities of the Company led to conflicts with private landowners of other land use values.	
Tourism Objective: To plan, implement and monitor forest	The Company was pro-active in dealing with remote tourism	

Objective/Targets	Achievements	Notes
operations on the English River Forest, in a manner that maintains the economic viability of the resource-based tourism industry established on or adjacent to the English River Forest. Targets: • Meet all negotiated conditions in existing agreements in accordance with the resource based tourism policy and area of concern prescriptions; • Implement the Resource Based Tourism Policy	operators and implemented measures, such as road removal, to help safeguard the remoteness of lodges and camps.	
Public Use Objective: To provide road-based access, land use and recreational opportunities through road maintenance and development to access areas planned for harvest within the plan period. Targets: • Provide continued opportunities for public recreation through the maintenance of approx. 945.7 kilometres of forest access roads during the five-year term of this plan • Provide for increased access to fisheries, where appropriate, as identified in the Dryden and Ignace District Fisheries Management Plans.	Annual Reports note that maintenance activities have been carried out as planned. The Company's "core roads initiative" puts emphasis on the maintenance of roads of most importance for forest access. There are relatively few access restrictions on the forest.	According to the FRWI, the Ministry and the Company are required to identify road maintenance and liability responsibilities for the Forest's access roads. This is addressed in Recommendation # 10.
Cultural Heritage Objective: To protect all identified archaeological sites, cultural landscapes, and traditional use sties in the English River Forest. Targets: • Include all known cultural heritage values on the values maps for the English River Forest • Protect these known values through implementation of the area of concern prescriptions approved in the forest management plan.	Cultural heritage values are identified on values maps. Good cultural values protection prescriptions have been developed through AOC process	
Provision of Forest Cover Objectives		
Featured Species Management Objective: To maintain a forest landscape pattern that will supply suitable current and future habitat for featured wildlife species over time,	Table FMP-13 of the 2000 FMP indicates that minimum target levels of wildlife habitat will be exceeded at the DFFC.	Recommendation # 5 of this audit notes that the MNR's approach to setting wildlife habitat target levels should be

Objective/Targets	Achievements	Notes
within the bounds of natural variation. Targets: • Specific targets provided in FMP-5 • Maintain at least 10-20% of the capable Marten habitat in the English River Forest as suitable habitat within core areas • Establish and implement a wildlife habitat mosaic, and protect critical habitat (calving sites, travel corridors) in the Caribou Management Area of the English River Forest • Maintain or increase the preferred Woodland Caribou habitat (winter habitat) within the Caribou Management Area • Maintain range occupancy for Woodland Caribou in the English River Forest • Maintain or increase the preferred foraging and winter habitat for Moose south of the Caribou Management Area • Implement habitat strategies for forest operations outlined in the Timber Management Guidelines for the Provision of Moose Habitat • No loss of critical nesting habitat for eagles, osprey, herons as a direct result of forest management activities • Report the preferred habitat for the suite of selected indicator species • Report the preferred forest cover currently used as critical habitat by rare, threatened or endangered species (Great Gray Owl)	The fragmented nature of the forest limits the suitable marten habitat as a % of suitable habitat in core areas to 5.1% at the start of the plan period. Percent increases to just over 10% at year 20 and holds steady through year 60. Caribou mosaic was implemented, but Table FMP-12 shows a projected significant decline in winter habitat. Preferred moose foraging habitat was not projected to increase, but winter habitat was. Implementation of moose guidelines was followed. Nesting habitat of stick nesting birds was addressed through implementation of relevant guidelines. Reporting targets were met through FMP tables.	revised.
Red and White Pine (Forest Unit) Ecosystem Objective: To ensure that red and white pine forest unit ecosystems, including old growth stands, are present in the landscape of the English River Forest now and in the future, while permitting a sustainable harvest of red and white pine. Targets: • Increase the Crown, managed area of the red and white pine forest units as compared to those projected of the null scenario	Crown managed area of red pine forest unit is projected to increase from 492 ha to 659 ha by DFFC according to Table FMP-12; area of white pine forest unit is projected to increase from 772 ha to 1,394 ha. Old growth target for red pine is not projected to be achieved in 2100, but it is exceeded in all periods prior to then. Old growth target for white pine is projected to be achieved.	

Objective/Targets	Achievements	Notes
without fire suppression (Alt 1) at Year 2100 (available plus reserve target is 284 ha for red pine, 410 ha for white pine) Maintain 10% of the Crown, managed red pine and white pine forest units areas in the productive forest at or above 121+ years of age to conserve old growth characteristics within these pine stands.		
Fisheries Habitat and Water Quality Objective: To maintain water quality and protect fisheries habitat within watersheds where forest management activities occur. Target: To maintain water quality and protect fisheries habitat within watersheds where forest management activities occur	Use of the Fish Habitat guides and implementation of AOC prescriptions address this objective	
Landscape Processes Objective: To maintain water yield and net primary productivity within the English River Forest: Target: Maintain water yield and net primary productivity indicators at Year 2000 levels (FMP-6).	Table FMP-6 from the 2004 FMP shows that the water yield (% productive forest area disturbed) increased slightly (from 14% to 15.9%), however the 2004 FMP is based on the English River Forest; no calculation using data from the former English River boundaries is provided, so the target cannot be accurately assessed.	Targets associated with FMP-6 were found to be of limited value and are no longer a requirement of the FMP process in the 2004 FMPM.
Silviculture Objectives		
There are no specific silviculture objectives. The plan states that: "...forest diversity and silviculture cannot be assessed in isolation but will be related to the specific management objectives under [social and economic objectives and the management of forest cover objectives]."		

Table 22. The Audit Team's Assessment of the Achievement of the Objectives of the 2004-2024 English River Forest Management Plan.

Objective/Targets	Achievements	Notes
Forest Diversity Objectives		
Landscape Diversity: To move towards a natural landscape pattern, structure, composition and function as it would occur in a natural fire-driven ecosystem within the bounds of natural variation. Target: To move towards a natural landscape pattern that resembles one created by fire.	Strategies for achieving this centre around implementation of the requirements of the NDPEG. In addition a natural disturbance template has been developed to provide guidance on a clearcut size distribution which approximates natural disturbance sizes	Strategies identified to meet the target rely heavily on meeting the requirements of the FMPM and the NDPEG
Old Growth: To identify, consider and provide for the forest age class structure needed to maintain functional old growth ecosystem conditions in forest units (ecosites) within their natural geographic ranges as part of the future forest conditions. Targets: - Quantitative targets will be derived from natural benchmark run (SFMM +/- 20%) considering historic and current forest condition and socio-economics - To contribute to the maintenance of red and white pine within their natural geographic ranges by maintaining no less than the 1995 amount (in ha) of red and white pine while permitting a sustainable harvest of red and white pine now and in the future.	Quantitative targets were set using the means identified in the target. Although targets are attained, they are very low. In 1995 There were 793 ha of red and white pine working groups (254 ha red pine, 539 ha white pine) on Crown land in the Forest. At the time of the DFFC, there are projected to be 2,682 ha of red pine, and 711 ha of white pine.	In this audit we note that the means used to set the old growth targets are flawed, and that the targets are too low to be ecologically meaningful for many forest units. This is addressed in Recommendation # 6 and Recommendation # 7. In addition, we believe projected old growth achievements are too modest, as discussed in Section 3.3.6.
Social and Economic Matters Objectives		
Forest Industry: To provide a continuous and predictable, economical supply of timber to the forest industry, acquired through environmentally sound practices. Targets: - Spruce/Pine/Fir: 925,000 m3/yr - Intolerant hardwood: 271,000 m3/yr - Minimize harvest volume fluctuations over time - Reduce delivered wood costs - Balance seasonal wood flows	The planned softwood harvest volume, 1.06 million m3/yr, exceeds the target; this audit was conducted too early in the plan period for there to be any data available regarding actual harvest levels. However, the planned volumes per hectare are not being achieved and the audit team feels that the planned harvest is excessive for this forest. The planned level of hardwood harvest was equal to the target level.	

Objective/Targets	Achievements	Notes
Personal Use of Forest Products: To provide opportunities for incidental volumes of timber for such uses as firewood, building logs, fence posts and other personal uses. Target: • Same as objective	It is expected that this will be done as has been done in past plan periods.	
Tourism: To maintain the viability of the tourism industry by protecting tourism values in the development of this FMP through the application of the Timber Management Guidelines for the Protection of Tourism Values and the use of RSAs as a method of protecting and sustaining these values. Target: • Meet negotiated conditions developed for tourism values in existing agreements to ensure the continued economic viability of the resource-based tourism industry	The Company has developed three RSA agreements and discussed the potential for an RSA with other registered tourism operators – for a variety of reasons unrelated to Bowater, the other operators chose not to proceed at the time.	
Other Commercial Usage (Non-Timber): To conduct forestry operations in a manner than considers and respects the other businesses that are located on, or utilize resources within the English River Forest. Target: • Meet conditions within negotiated existing agreements and planning prescriptions respective to other commercial uses on the English River Forest.	The Company generally has good relationships with other forest-based businesses and users.	
First Nations Involvement: To work with local First Nations communities to identify and implement ways to maintain the inherent social and economic benefits to Native peoples who traditionally use the forest for subsistence and spiritual value. Targets: • Encourage First Nations involvement in the forest management planning process • Protect First Nations values identified during the planning process by First Nations.	As outlined in Section 3.2.3 Bowater continues to make earnest efforts to involve First Nations in management of the Forest. Success with the Lac des Mille Lacs First Nation and Wabigoon Lake Ojibway First Nation are evident. The Company's efforts to engage the Ojibway Nation of Saugeen are as sincere, but results have not been as prominent. Required reports have been produced.	
Private Property/Patent Lands: To	The Company has been good at	

Objective/Targets	Achievements	Notes
conduct forestry operations within the English River Forest in a manner that provides consideration for the values of private property or patent lands. Target: No adverse effects to private property or patent lands from forestry operations.	dealing with the public to mitigate concerns related to effects on private property or patent lands.	
Public Access and Recreational Opportunities: To provide road access for public land use and recreational opportunities, in consideration of other forest values. Target: Provide continued opportunities for public access through continued road development and road maintenance where appropriate.	Annual Reports note that maintenance activities have been carried out as planned. The Company's "core roads initiative" puts emphasis on the maintenance of roads of most importance for forest access. There are relatively few access restrictions on the forest.	According to the FRWI, the Ministry and the Company are required to identify road maintenance and liability responsibilities for the Forest's access roads. This is addressed in Recommendation # 10.
Provincial Parks, Conservation Reserves and Natural Heritage Features: To conduct forestry operations within the English River Forest in a manner that considers the values of provincial parks, conservation reserves and natural heritage features. Target: Ensure that no negative effect occurs to provincial parks, conservation reserves and natural heritage features as a result of forestry operations.	The main vehicle for addressing this objective is through the use of AOC prescriptions intended to protect the boundaries of parks and provide timing restrictions for operations near some so as not to negatively affect the aesthetics.	
Cultural Heritage: To protect cultural heritage sites from damage or conditions that will increase rates of deterioration, while minimizing fibre loss and archaeological mitigation costs. Target: Protect cultural heritage values from disturbance due to forest management operations.	The Lac des Mille Lacs First Nation will have a representative on the 2009 FMP planning team. The hope is that having increased First Nations perspective on the planning team will help address the objective.	
Provision of Forest Cover Objectives		
Caribou Habitat: To maintain a continuous supply of suitable, mature, year-round habitat, distributed both temporally and geographically across the landscape, in such a manner as to ensure permanent range occupancy within the bounds of natural variation.	The caribou guidelines are being implemented through the use of the caribou mosaic and other measures. Although range occupancy is projected to be maintained, caribou winter habitat is projected to be 21% less at the time	The target of continuous occupancy is somewhat meager. Given that the species is recognized under COSEWIC a more meaningful objective

Objective/Targets	Achievements	Notes
Target: Maintain continuous range occupancy for woodland caribou on the English River Forest.	of the DFFC than at present.	would be to work towards habitat improvement.
Marten: To maintain a forest landscape pattern over time that will supply suitable habitat for wildlife species (including marten) associated with mature and over-mature forests, cavity trees and coarse woody debris. Target: Maintain 10-20% of the forest which has the capability to produce marten, in suitable conditions as described in the Forest Management Guidelines for the Provision of Marten Habitat	The marten guidelines are being followed through the creation of core habitat and implementation of stand-level habitat management. For the whole forest, the percent of capable area in core habitat declines from 12.3% in the period 0-20 years in the future, to 8.7% 40-60 years in the future. For the area of the forest south of the caribou line, the percent of capable area in core habitat declines from 9.5 in the period 0-20 years in the future to 7.0, 40-60 years in the future.	Target may be met when considering the whole forest. Achievements are at the low end of (or below) the target range.
Eagles, Osprey, and Heron: To prevent deleterious effects to eagles, osprey and heron reproduction and loss of nesting sites. Target: - No loss of current nesting sites as a direct result of forest management activities - No disruption to bird reproduction, as a direct result of forest management activities.	This objective is projected to be met by following the guidelines for protection of the various species of stick-nesting birds.	
Moose: To maintain a continuous supply of suitable year-round habitat for moose across the landscape within the bounds of natural variation. Target: Maintain the preferred foraging and winter/cover habitat for moose over time.	Table FMP-12 shows that moose foraging habitat is projected to decline on the forest, but winter habitat is projected to increase an offsetting amount. The FMP employs aspects of the moose guidelines for habitat protection.	Moose are resilient animals. The projected decline in moose foraging habitat is not expected to affect the population of moose on the forest.
Other Selected Wildlife Species: To ensure that forest management activities of the selected management alternative does not threaten the availability of preferred habitat for the selected wildlife species at the eco-regional level Target: Selected wildlife species habitat for the selected management alternative is to be at least 80% of	The target is met for all selected wildlife species.	In this audit we argue that the range of acceptable habitat values is too broad and Recommendation # 5 of this audit notes that the MNR's approach to setting wildlife habitat target levels should be revised.

Objective/Targets	Achievements	Notes
the lowest point in the benchmark run over time.		
Fisheries Habitat and Water Quality: To maintain water quality and protect fisheries within watersheds where forest management activities occur. Target: Protect water quality and fish habitat values, in accordance with the appropriate forest management guidelines and policies for protection of water quality and fish habitat.	Use of the Fish Habitat guides and implementation of AOC prescriptions address this objective	
Silviculture Objectives		
Cost Effective and Efficient Silviculture: To move towards the desired future forest condition through the implementation of a cost effective and efficient silviculture program. Target: Implement an efficient and cost effective renewal program where contributions to the Forest Renewal Trust Fund are \$3 to \$6/m3 for conifer and \$0.50 to \$0.75 for hardwood.	For the year 2004, the renewal rates were within the specified range. This appears to be appropriate given the rates of accruals and expenditures to and from the Forest Renewal Trust Fund during the audit period, and the silvicultural forecasts given in the 2004 FMP.	
Renewal and Tending Program: To implement a renewal and tending program that provides merchantable timber products from the forest. Target: Develop a silvicultural program that emphasizes the production of suitable material (e.g. pulp, sawlog, veneer).	The forecasts of silvicultural activities in the 2004-2009 FMP were consistent with the selected management alternative and appropriately balanced. This audit was conducted too early in the FMP term to assess the achievement of silvicultural targets, since only one year of silvicultural operations had been completed. Also, the annual report for the year 2004/05 was not available at the time of the audit.	
White Spruce Forest Ecosystems: To move towards a more natural representation of the white spruce forest ecosystem as would occur in a natural fire-drive ecosystem representative of the English River Forest. Targets: Increase the presence of white spruce tree species on the managed productive English River	This audit was conducted too early in the FMP term to assess the achievement of targets for regenerating white spruce, since only one year of silvicultural operations had been completed. Also, the annual report for the year 2004/05 was not available at the time of the audit.	

Objective/Targets	Achievements	Notes
Forest land base - Plant up to 375,000 white spruce seedlings over the next five years - Increase the white spruce seed inventory for use in producing white spruce seedlings.		
Red and White Pine Forest Ecosystems: To move towards a more natural representation of red pine and white pine forest ecosystems as would occur in a natural fire-drive ecosystem representative of the English River Forest. Targets: - Increase the presence of red pine and white pine tree species over the next 100 years on the managed productive English River land base - Plant seedlings where appropriate site conditions exist (up to 110,000 red pine and 10,000 white pine over the next five years). - Increase the amount of red pine and white pine seed source to provide seedlings for planting stock	This audit was conducted too early in the FMP term to assess the achievement of targets for regenerating red and white pine, since only one year of silvicultural operations had been completed. Also, the annual report for the year 2004/05 was not available at the time of the audit.	

3.7.2 Review of the Trend Analysis of Planned vs. Actual Forest Operations

The IFAPP requires that this assessment of sustainability review the Trend Analysis, which is included as Appendix A of this report. The Trend Analysis is prepared by the forest manager and is intended to identify significant trends in the management of the Forest. The Trend Analysis for this audit followed the guidance provided in the IFAPP.

To compare trends over the last three plan periods, the Trend Analysis combined data from the 1994 Brightsand plan period with data from 1995 former English River plan period, and data from the 1999 Brightsand plan period with data from the 2000 former English River plan period. These data were compared to those presented in the 2004 English River FMP.

Forest Area and Composition

Table 1 of the Trend Analysis shows that the total managed forest area declined from 871,324 ha to 851,289 ha between the 1994 Brightsand/1995 former English River plan periods and 2004. Over the same time, the area of production forest increased by over 22,000 ha from 758,320 ha to 780,912 ha. The Trend Analysis notes several factors

which complicate the analysis of changes in forest area, including:

- Removal of areas associated with four provincial parks and four conservation reserves;
- Adjustments to management unit boundaries;
- Reprojection of the inventory from Lambert to NAD 83;
- Addition of formerly private land held by Abitibi-Consolidated; and
- Introduction of the 1996 FRI.

Examination of Table 1 of the Trend Analysis shows that the area of some forest units changed significantly in the plan periods. For example, the area of spruce increased by approx. 36,200 ha between 1994/95 and 2004, while the area of jack pine, poplar and birch also increased. The trend analysis attributes these changes to inventory updates, rather than any effect of forest management. Changes in the area of Cedar and Larch from 0 ha to approx. 7,600 ha and 1,000 ha respectively are due to inventory updates and to the fact that the classification of working groups has changed so that the former other conifer (OC) working group is no longer accounted for, but the leading species which formerly made up the working group are. The area of balsam fir declined significantly from 36,454 ha to 2,244 ha, and this is attributed to infestations of spruce budworm during the period.

Harvest

Table 3 and Figure 2 of the Trend Analysis examine planned and actual harvest volumes on an annualized basis. Because data from the 2004 plan period are not yet available, discussion is limited to comparisons between the 1994/95 Brightsand/former English River plan periods and the 1999/2000 Brightsand/former English River plan periods. Overall, the harvest volume achieved for the 1994/95 plans was 72.2% of that planned (911,602 m³/yr achieved vs. 1,262,240 m³/yr planned). For the 1999/00 plans, the harvest volume achieved was 73.5% of that planned (853,656 m³/yr achieved vs. 1,160,731 m³/yr planned). In both plan periods, jack pine and spruce utilization was greater than that of other species. In the 94/95 plan periods, the jack pine harvest was 93.0% of planned and the spruce harvest was 73.4% of planned. For the two species combined, the utilization was 83.9%. For the 99/00 plan periods, the jack pine harvest was 85.1% of planned and the spruce harvest was 76.7% of planned. For the two species combined, the utilization was 80.7%. For the 94/95 plan periods, only 34.1% of the planned harvest volume of all other species combined was achieved; for the 99/00 plan periods 57.8% of the planned volumes of other species were harvested. The shortfall in achieved poplar harvest was notable, with only 34.4% achieved for the 94/95 plan periods, increasing to 65.1% in the 99/00 plan periods.

As far as trends go, the actual vs. planned harvest achievements for jack pine and spruce remained high in both plan periods, although the annual harvest of jack pine declined by approximately 161,000 m³/yr (from 480,843 m³/yr to 319,420 m³/yr), while the harvest levels of spruce remained virtually constant, decreasing by only 5,000 m³/yr. The harvest of poplar increased markedly over the two plan periods (from 76,526 m³/yr to 143,311 m³/yr), reflecting an increase in its marketability. Similarly the harvest of birch increased (from 724 m³/yr to 11,843 m³/yr).

Table 4 and Figure 3 of the Trend Analysis show the planned vs. actual harvest areas on an annualized basis. While the planned harvest area decreased about 11% from the 94/95 plan periods to the 99/00 plan periods (from 8,639.6 ha/yr to 7675.0 ha/yr), the

actual area harvested increased by about 3% (from 6382.5 ha/yr to 6564.9 ha/yr). As these data suggest, the actual harvest area achievement as a proportion of planned increased from 73.9% in the 94/95 plan periods to the 85.5% 99/00 plan periods.

Because of changes in Forest Unit classification from the 94/95 periods to the 99/00 periods, data in Table 4 of the Trend Analysis are hard to relate back to specific forest units. Fortunately, the text of the Trend Analysis provides some guidance in this regard. In the 94/95 plan periods 60.5% of the planned harvest of spruce forest units occurred, whereas in the 99/00 plan periods, 88.3% of the planned harvest occurred. The trend analysis attributes the increase in areal utilization to the fact that the planned area declined, while the harvest remained steady. For jack-pine leading forest units, the areal utilization was high through the time periods. For the 94/95 plan periods, the actual harvest was almost 95% of that planned (3479 ha planned vs. 3298 ha harvested). For the 99/00 plan periods, the actual area harvested exceeded that planned by 2% (1701 ha planned vs. 1733 ha actual). The Trend Analysis notes a decline in the planned harvest areas for both spruce forest units and jack pine forest units from the 94/95 plan periods to the 99/00 plan periods. However, this analysis should be tempered with the fact that the mixed conifer forest units, which were not a part of the forest classification in the 94/95 plan periods, accounted for 1,707 ha of planned and 1,431 ha of actual harvest in the 99/00 plan periods. The above trends in the spruce and jack pine forest units do not take into account the complicating factor of the mixed conifer forest units.

For all conifer forest units combined (spruce, jack pine, mixed conifer, white and red pine, and balsam fir), the planned harvest declined by about 18% from the 94/95 plan periods to the 99/00 plan periods (from 7329 to 6006 ha/yr). The actual harvest area declined by about 1% (from 5468 to 5386 ha/yr). As these data imply, the areal utilization of the conifer forest units increased from approximately 75% to almost 90%.

For hardwood forest units the planned harvest area declined by about 9% between the plan periods (from 1310 ha/yr in the 94/95 plan periods to 1187 ha/yr in the 99/00 plan periods), while the actual harvest area increased 28% (from 914 to 1172 ha/yr). As these data imply, the areal utilization of hardwoods increased markedly, from approximately 70% to almost 99%.

In sum, the main points from the harvest trend analysis, comparing the 94/95 plan periods to the 99/00 plan periods are:

- Decrease in planned harvest volume (8.0%);
- Decrease in actual harvest volume (6.3%);
- High levels of spruce + pine actual volume harvest relative to planned (83.9% for 94/95 periods and 80.7% for 99/00 periods);
- Lower, but increasing levels of actual harvest volume relative to planned for other species (34.1% for 95/95 periods and 57.9% for 99/00 periods), driven by increased utilization of poplar and birch;
- Decrease in planned harvest area (11.2%)
- Increase in actual harvest area (2.8%)
- Increasing levels of conifer areal utilization (from 74.6% in 94/95 periods to 90.9% in the 99/00 periods), driven mostly by an increase in utilization of spruce forest units; and
- Increase in hardwood forest unit areal utilization (from 69.7% in 94/95 periods to 98.7% in the 99/00 plan periods).

An analysis of the yields from recent years is discussed in Section 3.4.2

Silviculture

Tables 6a, 6b, and 6c of the Trend Analysis provide summaries of renewal, tending and protection operations. Table 6a shows the results of the comparison of planned vs. actual accomplishments; Table 6c summarizes these results prorated to the level of harvesting which took place. Table 6b shows the distribution of extensive, basic, and intensive renewal efforts.

The achieved levels of artificial regeneration approached or exceeded planned levels (when prorated for harvest) for the 94/95 and 99/00 plan periods. While seeding levels were less than planned (73.1% and 69.9% prorated for the 94/95 and 99/00 periods respectively), planting significantly exceeded planned levels (159.3% and 110.8%), accounting for the high levels of artificial regeneration.

Natural regeneration levels were lower than planned in both periods, and especially in the 94/95 plan periods (7.5% and 75.4% prorated for the 94/95 and 99/00 periods respectively). The reason for the extreme shortfall in the 94/95 periods is attributed to a "silvicultural lag" in the Trend Analysis, which noted a level of harvesting in the period prior to 94/95 lower than that which exists at present. However, this lag is not sufficient to explain the very low level of natural regeneration reported in Tables 6a and 6c of the Trend Analysis. Section 3.3.6 of this report notes that the shortfalls are related to issues with identifying and reporting of natural regeneration, mainly at the beginning of the FMP terms. Bowater has implemented a survey program to identify these sites for the purpose of improving reporting, and performance in this regard has been improving.

Site preparation achievements declined between the plan periods (98.3% and 71.0% prorated for 94/95 and 99/00 periods respectively). This reflects a greater reliance on planting without site preparation (in-fill plants, etc.) during the latter period.

Although tending achievements shows a marked decline between the plan periods (104.0% and 31.8% prorated for 94/95 and 99/00 periods respectively), the shortfall in the latter period is due to the fact that a planned 8,000 ha pre-commercial thinning projected did not take place. The intent of the project was to attempt to advance old-forest conditions.

In terms of trends, there was a decline in the prorated planned levels of most silvicultural activities between the two planned periods: planned natural regeneration declined by 46.3%, planned artificial regeneration declined by 25.6%, and planned site preparation declined by 26.2%. The achieved level of natural regeneration increased by several hundred percent, due to the very low achievement level in the 94/95 plan period. The achieved levels of artificial regeneration declined by 35.6%, and the achieved level of site preparation declined by 46.7%.

In general the proportion of planned silvicultural treatments that were achieved is greater for the 94/95 plan periods than for the 99/00 plan periods (even when the effect of not undertaking the 8,000 ha pre-commercial thinning project is taken into account). The shortfall in silvicultural accomplishments is addressed in this audit report primarily by Recommendation # 27.

3.7.3 Review of RPFO Assessment of Sustainability

The two RPFOs reviewed during this audit covered the 1994-1999 plan period on the Brightsand Forest and the 1995-2000 plan period on the former English River Forest. Both RPFOs point out that many of the indicators of sustainability identified in the 1996 FMPM were not calculated at the beginning of the periods covered by these RPFOs, especially spatial indicators. The RPFOs both concentrate on measurable indicators, such as the allowable, planned and actual harvest areas, and other depletions (namely fire), and harvest area frequencies. These analyses indicate that actual harvest area was less than planned and less than the allowable level on both forests. However, major fires on both forest resulted in a total depletion area that exceeded the maximum allowable depletion, however the impacts of large fires are accounted for in subsequent plans.

The English River RPFO indicated that the 2000 Independent Forest Audit found that there was no evidence that forest management was inconsistent with sustainability, and also indicated that there were no data which indicated a decline in wildlife associated with forest management.

Both RPFOs concluded that sustainability could not be adequately assessed on these forests. The arguments were that the indicators provided in the FMPM could not be used because much of the data needed to evaluate them did not exist, and it was not appropriate to rely on the two or three indicators that could be assessed to draw conclusions regarding sustainability.

3.7.4 Conclusions Regarding Sustainability

The Audit Team has reviewed the degree to which the Company met the FMP objectives on the former Brightsand and English River Forests, and its progress in meeting the objectives in the 2004 FMP, as well as the Trend Analysis and the RPFO. Portions of these reviews, contained in Sections 3.7.1 – 3.7.3, contribute to the assessment of sustainability, but additional audit findings are also relevant. This is because much of the analysis of the achievement of past plan objectives, and analysis of trends over the last two planning periods, is concerned with the results of past activities. An assessment of sustainability must also consider the likely outcome of following the planned course of action on the Forest. And so, in addition to the review of the information in Sections 3.7.1-3.7.3, the Audit Team has also considered the results of its document review activities, interviews with many people associated with the Forest, our observations from two days viewing the results of operations in the Forest, and some analysis undertaken using SFMM. From these sources, we have gained a great deal of insight into the management issues on the Forest.

The Audit Team concludes that some aspects of the management of the forest are supportive of sustainability, including most operational aspects of the Company's activities, the monitoring of silvicultural effectiveness, and the Company's relationships with other forest users.

The audit team notes that many of the objectives in the plans relevant to this audit were met, or are likely to be met given the implementation of strategies identified in the 2004

FMP. However, there are some important exceptions to this:

- There is strident disagreement between the company and MNR as to whether the marten core areas identified in the 2004 FMP will be sufficient to meet the plan's objectives;
- The old growth objectives were set using a flawed approach and therefore their projected attainment is not indicative of sustainability; and most significantly
- The audit team believes that the projected wood supply does not exist on the forest and that the harvest levels of the 2004 FMP will not be met because the projected yields are overestimated and areas of mature timber that were considered in the plan to be available will prove to be not economical to harvest.

As has been described above, the Audit Team believes that the evidence provided by actual harvest yields during the audit period indicates that the yield curves for the current forest, and likely for the second growth stands, forecast the availability of more wood than can be realized. The Company has acknowledged that the forecast yields in the 2004 FMP are higher than the yields which have been achieved. The implications of this go beyond lower-than-planned volumes in the current period – because the harvest in the current period has been increased at the expense of the future harvest, there is no buffer of volume to support the planned future harvests in the event of a yield shortfall, or a large natural disturbance. As a result, the future harvest is likely to be considerably lower than forecast, as was demonstrated by the SFMM analysis undertaken by the audit team. Furthermore, the harvest areas and volumes planned after 60 years in the future do not account for the provision of marten core areas, which is another factor that has inflated the projected future wood supply. It is important to note that provincial planning requirements do not require marten core areas to be set out beyond sixty years in the future, due to limitations on modelling capability. However, since there is no reason to think that marten cores will not have to be provided in future, omitting them from consideration after 60 years has the unintentional impact of inflating the likely level of the future wood supply.

Equally important in the audit team's assessment of sustainability was the unavailability of substantial area that had been allocated for harvest in the former English River Forest. This became evident in the fourth year of the 2000 English River FMP, when so many of the remaining allocated stands were not economical to harvest. These areas were considered to be available during the preparation of the 2000 English River FMP but were in fact too costly to harvest – in other words, the SFMM analysis has overestimated the amount of area that the Company is willing to harvest.

All the indications point to there being a considerably lower wood supply on the English River Forest than has been projected in the 2004 FMP. The audit team found no evidence that the general approach used to allocate harvest spatially changed between the development of the 2000 plan for the former English River and 2004 plan. As stated earlier (Section 3.4.2), text regarding allocation approaches are very similar in the 2000 and 2004 plans and there is no mention in the 2004 plan of attempting to avoid issues of economic unavailability of allocated wood that occurred in relation to the 2000 plan. Company staff presented the opinion that economic availability is a function of specific circumstances and therefore not a necessary criterion at all times in considering allocation options.

Another implication of the Company's overestimation of the future wood supply is that the lack of achievement of planned thinning activities in the 2000 ER FMP, and the shift

to an increased proportion of natural renewal in the current plan, represent choices that may be viewed as missed opportunities. These decisions, in combination with the high level of harvesting that is planned for the current time period, are factors that set the forest on a lower long-term harvest pathway than would otherwise have been possible.

Concerns related to sustainability of the 2004 FMP comparable to those described above were raised by some MNR staff during the development of the plan. There were numerous occasions, documented in the planning team minutes, where MNR District staff expressed concerns regarding the content of the FMP. As described earlier, MNR members on the planning team advised MNR managers against approval of the SMA and cited sustainability concerns as one of the main reasons. Although the audit team has reached its conclusion regarding the sustainability of the plan independently of the MNR, the fact that the two groups of experts (i.e. The audit team and MNR members on the planning team) each have serious concerns regarding the plan's sustainability is strong evidence of the plan's ultimate failing.

Finally, the audit team notes that the poor quality of planning (for the FMP, contingency FMP and annual work schedules) and reporting is also not indicative of sustainable management. As noted above, the MNR participated in the development of the FMP, reviewed it, and approved it, and so bears substantial responsibility for the unsustainable management regime that is now being followed on the English River Forest.

Based on these findings, we conclude that the 2004 Forest Management Plan does not provide for the sustainable management of the English River Forest.

3.8 CONTRACTUAL OBLIGATIONS

3.8.1 Planning and Reporting

Section 4 of the SFL requires that *"The Company shall prepare a forest management plan, work schedules, and reports for the English River Forest in accordance with the Crown Forest Sustainability Act and the Forest Management Planning Manual, and shall abide by that plan and all other requirements described in that manual and the Crown Forest Sustainability Act."*

This audit has identified many instances in which plans and reports were not prepared in accordance with the direction provided by the FMPM (e.g. the Terms of Reference were not adhered to; Annual Reports were missing information, contained inaccurate information and were submitted late; development of the Contingency Plan suffered from severe irregularities; incomplete annual work schedules were submitted by the Company and approved by the MNR). The audit team concludes that the planning and reporting components of the SFL were not met by the Company. We note also that the Ministry of Natural Resources contributed to this failure by being party to the deviations from the Terms of Reference, sanctioning the irregularities in the development of the Contingency Plan, and approving the inadequate contingency plan inadequate Annual Work Schedules.

3.8.2 Payments of Crown Timber Charges

As of October 31, 2005, there were no outstanding dues or renewal trust payments on the English River Forest from the audit period.

3.8.3 Forest Renewal Trust

Minimum balances were maintained throughout the audit period for the Brightsand and former English River Forests (2000-2004) and the merged Forest (2004/05).

We reviewed Company records for items invoiced to the Forest Renewal Trust for the years 2000 through 2005, for both the Brightsand and former English River Forests and the combined English River Forest. All invoices for this period were examined and all expenses were found to be eligible and appropriate as per the requirements of the Trust Agreement. The Company maintains good records of the silvicultural expenses and maps of the treatment projects as required by the licence.

Reviews of the renewal rates were conducted by the Company and MNR as required by the licence. Rate reviews were conducted annually, and a change to increase the rates for both hardwood and conifer on the English River Forest, and the rate for hardwood on the Brightsand Forest, was recommended and implemented in the year 2000-2001. Otherwise the renewal rates remained constant throughout the remainder of the audit period. The renewal rates appear to be appropriate for both forests, based on the expenditures and revenues of the Forest Renewal Trust Fund accounts for both forests and the combined forest during the audit period, and in the case of the English River Forest, fall within the bounds for renewal rates identified in the 2000-2005 FMP.

3.8.4 Forestry Futures Trust

During the audit period, Bowater conducted activities related to a three-year (2003-2005) Forestry Futures Trust Fund project for pre-commercial thinning of older plantations and seeded areas. In 2003, 1,000 ha of pre-commercial thinning work was completed, and in 2004, 1,750 ha was completed under this project. The final year of the project is to be implemented in the 2005/06 fiscal year. Funding for the work was divided between the Forestry Futures Trust Fund and the Forest Renewal Trust Fund. We reviewed six sites in the field where this work had been conducted, in both 2003 and 2004, and as discussed previously, the quality of the work was good. Bowater keeps good records of the projects, including maps of the treated areas. Interim reports have been submitted to the Forestry Futures Trust Fund as required. We reviewed the financial records of the project for both the Forestry Futures Trust Fund and the Forest Renewal Trust Fund portions and did not identify any discrepancies.

3.8.5 Wood Supply Commitments

There were a significant number of wood supply commitments on the Brightsand and former English River Forest during the audit term. Most of these commitments were to various mills and companies that are part of the Buchanan Group of Companies, and they are included in a Memorandum of Agreement between the two companies. While the usual stresses and strains inherent in such a relationship were present on the two forests (and continued on the amalgamated English River Forest), the relationship was

generally working well. Similarly, the commitment with Abitibi-Consolidated was also functioning satisfactorily.

A conditional commitment to Columbia Forest Products was not in effect because Columbia has not yet met the condition that would bring the commitment into force.

3.8.6 Specified Procedures Field Assessment

We conducted a field assessment of 23% of silvicultural treatments that were invoiced to the Forest Renewal Trust for the year 2003-2004. In all cases the treatments were in place as mapped in the annual reports, were appropriate for the site conditions, and had been implemented to a good standard of quality. We also conducted a field assessment of 2,585 ha of free-to-grow survey area conducted by the Company in the year 2003-2004. Our observations were in agreement with the documentation of these assessments provided to us by Bowater, and we also confirmed the free-to-grow status of these areas.

The Specified Procedures report for the English River Forest, prepared by KPMG, identified several vague items and apparent errors in the Company documentation. All of these items were checked and were verified to be eligible and appropriate expenses. Most of the vague items were related to expenses that occurred close to the start or end of the fiscal year (for example, invoices received during the latter part of one year but paid in the following year). Bowater keeps good records, including maps, of projects invoiced to the Forest Renewal Trust.

3.8.7 Inventory and Monitoring Obligations

There were no Category 1 or 2 lands identified in the amended licence document (May 2005) for the merged English River Forest. Free-to-grow assessments were conducted on most of the areas requiring survey during the audit period, and any areas that required treatment were included as eligible areas in the regular silvicultural program. No pest control treatments were conducted during the audit period. Completion of free-to-grow surveys was discussed previously.

3.8.8 Compliance Planning and Monitoring

The SFL requires that the Company prepare a compliance plan which describes the following:

- the proposed planning, monitoring, reporting and education/prevention activities to be undertaken by the Company and any overlapping licensees;
- the responsibilities of the Company and overlapping licensees regarding ensuring compliance with the FMP, AWSs, applicable legislation, etc.

In addition the compliance plan is to include an annual assessment of compliance and a schedule of all monitoring activities. The SFL also identifies the company's responsibilities regarding carrying out forest operations inspections and providing inspection reports to the MNR.

The Company's performance in meeting its compliance planning and monitoring responsibilities are discussed in detail in Section 3.6.1 of this report. General the audit team concluded that a good compliance monitoring system is in place, but several

compliance related issues were noted, including:

- Bowater was not reporting non-compliances within required timeframes. For example, some trespass non-compliances were not reported for one or two years after operations were;
- Unwarranted delays in action for compliance issues and non-compliances. Bowater did not address all non-compliances as agreed in a timely manner. Some non-compliance remediation work remained outstanding 1 to 2 years later;
- MNR is in some instances facilitating lack of action by Bowater by not taking measures to encourage or require the company to address non-compliance issues;
- There was no substantive discussion of compliance issues and Bowater action for continuous compliance improvement in the annual reports, annual compliance plan or five-year compliance strategy; and,
- Comprehensive compliance-related text and summaries be included in the annual reports.

The issues related to the Company's compliance performance are dealt with in recommendations 30 – 34.

3.8.9 First Nations Participation

Section 20 of the English River Forest SFL states: *"The Company shall work co-operatively with the Minister and local Aboriginal communities in order to identify and implement ways of achieving a more equal participation by Aboriginal communities in the benefits provided through forest management planning."*

Interviews conducted during the audit with MNR and Bowater staff determined that a variety of efforts have been made (as discussed in Section 3.2.3). Although considerable effort will be required to achieve a more equal participation by Aboriginal communities, the audit team believes the sincere efforts of the Company meet the licence condition.

3.8.10 Previous Independent Forest Audit

The previous audits for the Brightsand Forest and former English River Forest were both conducted in 2000.^{25,26} The final report of the audit of the former English River Forest was submitted in July, 2001, and the final report of the audit of the Brightsand Forest was submitted in April, 2001. The action plans for addressing the audits' recommendations were due two months after the reports were submitted (i.e. in September 2001 for the former English River, and in June 2001 for the Brightsand Forest). The action plan for the former English River Forest was submitted in July, 2001 – the same month that the final audit report was submitted. (Company and MNR staff were able to make significant progress on the action plan, using the draft final audit report as a basis for its preparation.) The action plan for the Brightsand forest was submitted in July, 2001. Therefore, although the Brightsand action plan was a month late, the Company and MNR performed well in submitting the documents within, or close

²⁵ Callaghan and Associates Inc. November 2000. An Independent Audit of Forest Management on the Brightsand Forest for the Period 1995 to 2000.

²⁶ AuditFor Inc. September 2000. Independent Forest Audit, English River Forest.

to the required timelines.

The status reports on implementation of the action plans were due two years after approval of the action plans. The status reports for both audits were not signed as prepared by the Company and MNR until June 29, 2005, and were not submitted by MNR until July 5, 2005. The intent of the status report is to take stock of the status of implementation of the previous audit's recommendations and provide an opportunity to modify courses of action based on the issues or problems which have arisen. With the status reports being submitted so late, they do not serve their intended purpose well at all. The MNR and Company shared responsibility in preparing the action plans and status reports as suggestions and recommendations from the previous IFAs were directed at both organizations.

Recommendation # 39

The MNR and Company should meet the required schedules for submission of the status report associated with this audit.

Reviews of the status of implementation of actions associated with recommendations from the IFAs of the former English River Forest and Brightsand Forest are provided in the following two tables.

Table 23. Review of the implementation of recommendations made in the 1995-2000 Independent Forest Audit of the former English River Forest.

Recommendation	Actions Taken	Status
1. The MNR Forest Management Branch should review the administration of the Renewal Trust Fund to ensure that stumpage revenues are posted immediately to the trust to account to ensure that month end balances accurately reflect the money available for funding silvicultural activities	MNR Forest Management Branch and MNR Corporate Accounting and Controllershship Section held discussions to eliminate procedural difficulties that were delaying renewal changes being paid to the appropriate Renewal Trust Account. The problems were related the MNR invoicing system and not the actual administration of the Trust. Procedural changes have been put in place to address this recommendation. Since these changes, renewal charges have generally been posted to the Trust Fund Account within 2 months, compared with up to 8 months or more previous to the changes. These relatively short delays have not caused any significant problems for the Bowater Forest Renewal Trust Fund Account during the audit period.	Complete
2. The audit team recommends that the Company and MNR Northwest Regional Office maintain a list of all administrative amendments and a copy of all major and minor amendment documentation made to the English River TMP during the 1995-2000 periods.	A list of amendments was produced in August 2001 and copies were sent to the MNR Regional Office. However, this audit found that most amendments have not been forwarded to the relevant government offices (i.e. MNR Northwest Region, MNR, Forest Management Branch, MNR Toronto, and MOEE regional office).	Addressed initially, but the issue remains and is addressed in Recommendation # 16
3. The audit team	The RPFO produced for the 2004 English River Plan	Complete

Recommendation	Actions Taken	Status
recommends that the Company and MNR review all annual reports for the period 1995-2000 to ensure that amendments, which were made to the planned forest management activities, are reconciled with the Report of Past Forest Operations.	contained figures consistent with the latest amended version of the FMP	
4. The audit team recommends that the MNR and the Company ensures that annual work schedules include documentation with respect to MNR approval and public consultation requirements.	MNR and the Company report that upon follow-up to this recommendation, MNR district confirmed that all of the AWSs were properly approved as scheduled. It is believed that in some cases the approval pages at the front of the binders were missing simply due to wear and tear. The Company has taken steps to ensure the durability of the key pages. This audit found that all AWSs had proper approval pages with master in a plastic folder. The only problem with approval page was the silviculture prescriptions did not have an RPF stamp as required. This audit found that AWSs had incomplete consultation records (not all ads, notices, letters and other correspondence were included).	Partially addressed. Recommendation # 21 of this audit deals with the issue of incomplete consultation records in AWSs.
5. The audit team recommends that the Company implement a Standard Operating Procedure to prevent the accumulation of slash piles. Furthermore, the audit team recommends that the Company eliminate the backlog of existing slash piles on the English River Forest.	Bowater has developed a Slash Pile SOP and a related work instruction under Bowater's EMS effective December 2002. The Company reports the following additional actions have been taken: • investigation of alternative harvest methods to eliminate harvest slash at roadside; • reviews of SOP at annual compliance meeting with each operator; • usage of slash pile burn plans as required by MNR; and • assessment of slash pile burn sites within one year of post-burn to finalize silvicultural prescriptions From 1999 to 2003, Bowater reported 501 net ha of slash pile burn area, which represents 147% of the FMP target, pro-rated to the actual harvest levels during the period, and accounting for the shortened (4-year) FMP period for the English River Forest.	Continuing. The perception of the auditors is that there are many unburned piles of slash on the forest in contrast to the Company's perception and some documentation. Recommendation # 23 directs the Company to conduct a field check of its slash pile management to assess whether its status is satisfactory
6. The audit team recommends that the Company implement a Standard Operating Procedure to prevent the accumulation of chipper	The Company has developed several versions of a SOP for managing chipper debris. In addition, the Company has developed updates of a work instruction under its EMS on chipper pile management. MNR and the Company developed a strategy to	Progress has been made, but this issue is not completely resolved.

Recommendation	Actions Taken	Status
debris piles. In addition, the audit team recommends that the Company eliminate the backlog of existing chipper piles from the English River Forest. The audit team further recommends that the Company work towards a similar time commitment made to deal with slash pile removal.	address the backlog of piles to November 1999. Company reports that the backlog of chipper debris piles was addressed by the fall of 2003. This audit found that much progress has been made in addressing chipper piles, but that not all instances of chip pile management were producing satisfactory results.	Recommendation # 22 directs the Company to continue developing techniques for reducing the impacts of chipper piles.
7. The audit team recommends that the Company ensure that site damage by rutting be reduced and that the Company operators be informed of the problem through an appropriate training program.	The Company has developed and implemented a Work instruction on minimizing rutting as part of its EMS. Training to operators has been provided. In addition, the MNR's Site Guide, which will include protection of the physical environment, is scheduled for release in 2006/07. Rutting did not appear to be a significant problem on the sites we assessed during the audit. There was some localized rutting but in general the overall extent was minimal.	Complete
8. The audit team recommends that the Company consider the use of natural ingress when developing forest renewal operating plans.	The Company has developed a prescription for the use of natural ingress, and has developed work instructions for the preparation of site specific operations prescriptions that incorporate natural ingress. SGRs in the 2004-2009 FMP include treatment packages that include consideration of natural ingress for a number of forest units, for example, low-density fill planting to augment natural ingress stocking levels.	Complete
9. The audit team recommends that the Company ensure that its road use strategies incorporate renewal prescriptions.	This recommendation is addressed through the implementation of work instructions for harvest block assessment and FOP as well as use of sign-off maps utilized by Bowater staff and contractors. During the field audit we reviewed a number of sites where tertiary roads had been planted.	Complete
10. The audit team recommends that the Company, in consultation with the MNR, annually review proposals for herbicide application to ensure that the proposals are consistent with the objectives of the forest management plan.	Based on the field assessment conducted during the audit, the levels of herbicide tending are adequate to meet silvicultural objectives. Bowater conducts regeneration condition assessments, which provide information that is used to determine the need for herbicide applications on areas where renewal treatments have been applied.	Complete
11. The audit team recommends that MNR complete its aerial surveys of moose aquatic feeding areas in the English River	Nine basemaps were flown in 2001, 28 in 2002, and the remainder were flown in 2004.	Complete

Recommendation	Actions Taken	Status
Forest.		
12. The audit team recommends that the MNR and Company ensure that the annual reports include a summary of the compliance reports conducted by both the Company and MNR. Furthermore the audit team recommends that a system be devised to accurately report on the number of actual instances of noncompliance that have occurred.	As a result of new requirements identified within the Annual Report Review Protocol of Sept. 21, there are now two compliance tables to be included within each annual report: 1) identifying MNR inspections and 2) identifying Company inspections. Annual Report Table AR-12 reports on the number of non-compliances. Compliance tables were not completed for 2003/04 AR.	The framework for reporting is in place, but ongoing effort is required to produce compliance tables.
13. The audit team recommends that the Company, in consultation with the MNR reviews wood supply commitments from the English River Forest.	The Company and MNR have reviewed the wood supply commitments as part of the process of amalgamating the former English River Forest and the Brightsand Forest.	Complete
14. Based on the results of its audit, the audit team recommends that SFL #542454 for the English River Forest be extended for a further five-year term.	The extension of the licence for the term 2003-2008 is currently awaiting Ontario government cabinet approval.	Pending, See Section 4.0 for a description of licence extension process.

Table 24. Review of the implementation of recommendations made in the 1995-2000 Independent Forest Audit of the Brightsand Forest.

Recommendation	Actions Taken	Status
1. The Minister should extend the Sustainable Forest License of the Brightsand Forest, conditional upon Bowater making progress to implement the recommendations of this report for which they are specifically responsible.	The Brightsand SFL was amalgamated with the English River SFL effective May 24, 2005. The term of the English River SFL is April 1, 1998, to March 31, 2018. The SFL has not yet been extended by an SFL amendment.	Complete
2. Bowater and MNR are to improve their commitment to the Brightsand Forest by increasing their on-site presence. Such field visits should be used to set prescriptions, monitor operations, and assess the	Bowater staff reorganization was announced in November of 2001, partly to provide a focus on "on the ground performance". A Company office in Ignace provides field presence for the Forest. Bowater developed a series of field procedures for silvicultural effectiveness monitoring, including verification of pre-cut FOPs and assessment of post-	Complete

Recommendation	Actions Taken	Status
effectiveness of silvicultural activities.	cut FOPs, and regeneration condition assessments, which are generally conducted three years following treatment to determine if any further treatments are required. Two MNR positions were transferred from Thunder Bay and assigned to the Dryden District Information Management Team. The Number of inspections exceeds that of past audit period	
3. MNR is to see representatives from the mining and the logging industry to participate in the Brightsand LCC.	Upon amalgamation of the Brightsand and former English River Forests, the Brightsand LCC was disbanded and members of the former committee were offered an opportunity to join the English River LCC. The process of expanding membership on the English River LCC is underway.	Ongoing
4. MNR staff is not to be active members of the LCC.	The terms of reference of the Ignace LCC have been updated so that the role of the MNR is restricted to support of the LCC. The LCC is not chaired by the MNR, and MNR staff are not active members	Complete
5. MNR should retain an independent facilitator for the Brightsand LCC.	The Brightsand LCC has been disbanded and interested members were invited to participate in the Ignace LCC. The terms of reference for the Ignace LCC do not include an independent facilitator. Members of the English River LCC believe the meetings are well conducted and that an outside facilitator is not needed. Ignace LCC members seemed quite satisfied with the current chair and the way the LCC is going.	Complete
6. Bowater is to accurately track all elements of the Brightsand Forest, paying particular attention to areas that have been harvested. Procedures are necessary to ensure regular and accurate maintenance of the inventory.	A new (1996) inventory was in place for the initiation of the amalgamated FMP, and Bowater is employing Woodlands, the System for the tracking of landbase operations. Procedures have been developed for integrating the EMS and Woodlands the System for landbase tracking including regeneration condition surveys, free growing regeneration surveys and forest operations prescriptions. Difficulties were encountered during the inventory update process for the 2004-2009 FMP with historical silvicultural records, which were captured in Lambert projection, which is not compatible with the NAD 1983 projection of the 1996 inventory. These issues were resolved, within the limits of the historical data formats, and all silvicultural information is now being captured in the NAD 1983 projection. In combination with the Silvicultural Record System employed by Bowater this has greatly facilitated the update process. Landbase updates are presently being conducted annually by Bowater.	Complete

Recommendation	Actions Taken	Status
7. The MNR should review its approach to socio-economic impact assessment and the use of the socio-economic Impact Model (SEIM) and the applicability of both in forest management planning.	MNR commissioned a review of SEIM and its approach to socio-economic analyses. A report was produced in Sept. 2003, with final version submitted January, 2004. The report's recommendations were reviewed and assessed in the preparation of the new (2004) FMPM. The new FMPM requires social and economic descriptions to profile all resource dependent communities and all Aboriginal communities in or adjacent to the management unit. The new FMPM no longer requires the mandatory use of SEIM. Rather, flexibility is provided to use an alternative MNR-supported model or quantitative analysis based on data in the social and economic description.	Complete
8. Liability and maintenance responsibility are to be defined for all primary and secondary forest access roads on the Brightsand Forest.	Bowater and MNR District have collaborated to produce a roads and water crossings inventory. Liability and maintenance responsibility have not yet been defined. The FRWI report is providing guidance. Company and MNR staff report that liability and maintenance responsibilities will be resolved during the present plan term.	Incomplete Recommendation # 10 directs the MNR and Company to resolve ownership and maintenance responsibilities.
9. The MNR is to update the Silvicultural Guide for Boreal Ecosites to include salvage operations.	Salvage operations are allowed without triggering the exceptions process under the MNR's present Silvicultural Guide to Managing for Black Spruce, Jack Pine and Aspen on Boreal Ecosites in Ontario. The review of the guide began in May 2005, five years after this recommendation was made, under condition 38 of the Declaration order regarding MNR's Class EA. Regional workshops were conducted in June 2005. Should the review conclude that revisions are necessary, a new guide will be produced.	Still in progress
10. Annual Work Schedules are to rationalize the variance between scheduled operations and the planned annualized rates.	This audit found limited rationale in AWS text explaining why planned operations varied from 1/5 of FMP planned levels.	Incomplete Recommendation # 17 of this audit directs the Company not to submit AWSs until all planning requirements have been met.
11. Bowater is to initiate operator training in the residual structure requirements for American marten.	In 2001 Bowater developed an SOP addressing this. The SOP has since been replaced by a work instruction as part of Bowater's EMS. Training sessions were provided for all operations with MNR Biologists providing presentations. Field visits of sites harvested under the marten guidelines confirmed that sufficient snags were left to satisfy those guidelines.	Complete

Recommendation	Actions Taken	Status
12. MNR should continue to monitor caribou numbers, their movements and habitat use on the Brightsand Forest.	Bowater engaged in a caribou collaring project, and made information available to MNR. Data was used in the production of the 2004-2024 English River FMP. Surveys were conducted on two lakes in 2001, six lakes in 2002, and six more lakes in 2003. Winter surveys were conducted in 2003. MNR reports that it continues to identify and explore caribou research needs through District Fish and Wildlife Strategies, and other fora.	Ongoing.
13. Bowater is to increase the utilization of all fibre types, especially hardwood timber.	Bowater constructed new conifer sawmills in Ignace in 2002, and in Thunder Bay in 2003. Hardwood fibre utilization was addressed partly through addressing the Forest's wood supply commitments with Columbia Forest Products ((1995), Buchanan Northern Hardwoods (1996), and Northern Sawmills and Atikokan Forest Products (1998). Trend Analysis data indicates significant improvements in hardwood utilization. Significant bypass identified through FOCIS reporting or depletion review was field verified during the final year (2003/04) of the 1999 FMP to ensure that all allocations were fully utilized	Complete/ ongoing
14. Bowater is to dispose of, or eliminate slash piles. Where slash piles have been disposed of, the area should be treated within the next year.	Bowater has developed a Slash Pile SOP and a related work instruction under Bowater's EMS effective December 2002. The Company reports the following additional actions have been taken: • investigation of alternative harvest methods to eliminate harvest slash at roadside; • reviews of SOP at annual compliance meeting with each operator; • usage of slash pile burn plans as required by MNR; and • assessment of slash pile burn sites within one year of post-burn to finalize silvicultural prescriptions. For the five-year period from 1999 to 2003, 215 net ha of slash pile burning were reported, which represents approximately 58% achievement of the FMP forecast.	Continuing. The perception of the auditors is that there are many unburned piles of slash on the forest in contrast to the Company's perception and some documentation. Recommendation # 23 directs the Company to conduct a field check of its slash pile management to assess whether its status is satisfactory
15. Bowater should annually report on the area where natural renewal is to occur.	The reporting requirements related to natural renewal were clarified by MNR thorough the Annual Report Review Protocol, Version 1, Oct. 25, 2000, and in the Annual Report Preparation and Review Protocol Version 2, Nov. 5, 2002 as required by the FIM. The	Progress has been made, but this audit identified a similar concern.

Recommendation	Actions Taken	Status
	Protocols and the FIM have negated the need for a local protocol. However, this audit (Recommendation # 28) emphasizes that the Company should take appropriate measures to ensure that the reporting of natural regeneration will substantially meet the 2004 FMP forecasts.	
16. Bowater is to undertake FTG surveys annually. The backlog of 50,000 ha of BS/NSR should be assessed for inclusion into the landbase prior to the start of the planning process for the 2004 management plan.	Backlog has been significantly reduced through TFG surveys. During the 1999-2004 FMP term, Bowater reported a total of 53,158 ha of area assessed for free-to-grow, of which 91% met the silvicultural standards for the projected forest units. This has reduced the backlog area to approximately 5,000 ha.	Progress has been made, but efforts are continuing.
17. Bowater is to collaborate with MNR and local stakeholders in the development of a strategic roads action plan. This may involve the review and revision of the Company's current internal plan.	Bowater and MNR District staff have collaborated to produce a roads and water crossings inventory. Liability and maintenance responsibility have not yet been defined. The FRWI report is providing guidance. Company and MNR staff report that liability and maintenance responsibilities will be resolved during the present plan term, and that this will involve consultation with stakeholders.	Incomplete Recommendation # 10 directs the MNR and Company to resolve ownership and maintenance responsibilities.
18. Bowater and MNR are to review the workloads of their staff and determine what additional human resources are required to meet their obligations.	In spite of the fact that the status report says: "The Brightsand and English River SFLs have been amalgamated. MNR and Bowater note that the resulting staffing efficiencies have enabled both organizations to meet their respective obligations", this audit asserts that one reason that reporting requirements are not being met may be that staffing levels are not yet sufficient.	Several recs. Are made in this audit to improve the quality of reports, plans, etc. One means of doing this is likely reviewing and addressing staff work loads.
19. Bowater should develop and implement procedures for updating, validating, and maintaining their information systems.	Bowater is employing Woodlands, the System for the tracking of landbase operations. Procedures have been developed for integrating the EMS and Woodlands the System for landbase tracking including regeneration condition surveys, free growing regeneration surveys and forest operations prescriptions. Difficulties were encountered during the inventory update process for the 2004-2009 FMP with historical silvicultural records, which were captured in Lambert projection, which is not compatible with the NAD 1983 projection of the 1996 inventory. These issues were resolved, within the limits of the historical data formats, and all silvicultural information is now being captured in the NAD 1983 projection. In combination	Complete

Recommendation	Actions Taken	Status
	with the Silvicultural Record System employed by Bowater, which is integrated with the spatial tracking in the GIS, this has greatly facilitated the update process. Landbase updates are presently being conducted annually by Bowater.	
20. Bowater and MNR should develop a mutually agreeable monitoring system for reportable timber and non-timber indicators.	The requirements of this recommendation are addressed largely through the new FMPM. Section 1.2 outlines the Long-Term Management Direction requirements including Section 1.2.6.1 Objectives and Indicators. This section includes the requirement for the planning team, with the assistance of the LCC, to develop management objectives related to the objective categories and indicators in Figure A-5 (Indicators and Objective Achievement) of the new FMPM. The planning team may develop additional management objectives and indicators including the timing of assessment of each indicator. For each management objective, a desirable level for each indicator will be established.	Complete
21. Bowater is to increase the frequency of its forest compliance inspections.	The frequency of compliance inspections very high, more than adequate. However, this audit identified that there is a need for increased oversight by Bowater on the compliance inspection reports completed by its contractors.	Recommendation # 31 identifies the need for increased oversight.
22. Bowater is to meet the required minimum balance provisions in its Forest Renewal Trust fund.	The minimum balance has been met each year since the audit. The Brightsand Forest Renewal Trust Fund was in compliance with minimum balance requirements for the years 2000-2004. The (merged) English River Forest (which includes the former Brightsand Forest) had the required minimum balance in place at March 31, 2005.	Complete
23. A review of the renewal rates currently being assessed for the Brightsand Forest should be undertaken and adjustments made, if necessary.	Renewal rates are reviewed annually by Bowater. A change was made to increase the hardwood rate for the Brightsand Forest in the year 2000/2001. The conifer rate has remained the same throughout the audit period. Based on our review of the rate of expenditures from the Forest Renewal Trust, and the balances that have been carried during the audit period, the renewal rates appear to be appropriate. The rates have also been within the limits identified in the 1999 and 2004 FMP objectives.	Complete
24. MNR should undertake a review of trust fund activity on the Brightsand Forest. Such a review would include, but not be limited to: - Accounting, record keeping, and disclosure; - Monthly and annual reporting (to Company, MNR and other	MNR instituted the Specified Procedures Assessment in response to this recommendation, and also improved the timeliness of posting revenues from the Forest Renewal Trust charges. During the audit period, no transfers were made between any of Bowater's Forest Renewal Trust Fund accounts. For the Brightsand Forest, the required minimum balances were in place at March 31, for the five-year period from 2000 to 2004, and the merged English River Forest for the year 2004/05 as required.	Complete

Recommendation	Actions Taken	Status
stakeholders) • Use of funds • Appropriateness of transfers between funds; • Timing of payments from the fund • Action required when minimum balances are not maintained or negative balances exist.	We reviewed records of all charges to the Forest Renewal Trust for this same 5-year period. All expenses were eligible as defined under the Forest Renewal Trust Agreement, were appropriate, and were in substantial agreement with activities reported in the Annual Reports for the period. Bowater maintains good records of Forest Renewal Trust Fund expenditures, including maps and project reports. No activities were funded through the Forestry Futures Trust Fund for the Brightsand Forest during the audit period.	
25. The MNR is to ensure compliance with the provisions listed in paragraphs 6.11 and 6.14 of the amended Forest Renewal Trust Agreement for the years ended March 31 1998, 1999, and 2000	Paragraph 6.11: annual financial statements are prepared for each Forest Renewal Trust Account at year end (March 31). Paragraph 6.14: An audit is carried out each year on the Trust Fund as specified. In addition, MNR has implemented the Specified Procedures Audit process. Detailed audits of the operation of the Forest Renewal Trust are conducted at least once per 5-year audit period.	Complete
26. The Company should establish a program to evaluate and report on all treated areas within three years of harvest.	Bowater has established a program of Regeneration Condition Surveys which are conducted three years following treatment. Information from these surveys is used to evaluate the need for any further silvicultural treatments that may be required on these areas, and is used in the preparation of Annual Work Schedules for silvicultural activities. Records are tracked in Bowater's Silvicultural Record Keeping System (Woodlands – the System).	Complete

The two previous audits contained 40 recommendations between them. The Company and Ministry have addressed most of the recommendations. The issues raised by some of the recommendations surfaced again in this audit, and so the conclusion of the audit team is that they have not yet been fully addressed. The audit team recognizes that for some, efforts have been made, but more work is needed. The issues addressed in the previous recommendations for which recommendations have been made in this audit are

- forwarding of FMP amendments to all locations where plan copies are kept;
- the need to include documentation related to public consultation in AWSs;
- resolving ownership and maintenance responsibilities for forest access roads;
- workloads of company and MNR staff;
- slash pile management; and
- chipper debris management.

3.8.11 Licence Extension

The SFL for the English River Forest requires that an independent review team conduct a review of the Company's compliance with the terms and conditions of this licence and recommend to the Minister whether the term of this licence should be extended for five years. This audit satisfies the licence requirement.

Based upon the findings of audit, the audit team does not recommend extension of the licence for a further five-year period.

Reasons for Recommendation of Non-Extension

The reasons for the audit team's recommendation that the licence should not be extended are discussed in several places in this report. They are provided here as a synopsis. The audit team has identified two reasons for non-extension of the licence. First, the management of the forest is not within the bounds of sustainability; and second, the requirements of the licence regarding planning were not adhered to. These reasons are discussed below.

1. Sustainability. This audit has identified the following key concerns with regard to the sustainability of the forest's management as planned and forecast in the 2004 English River FMP:
 - Overestimation of yield curves of the current forest (Section 3.3.5);
 - Considerable area that was considered in the plan to be available for harvest is anticipated to be economically unavailable (Section 3.4.2);
 - The planned harvest of conifer in the current plan period exceeds the plan objective by 15% and has the impact of reducing the future conifer harvests throughout the entire 100-year modelling period (Section 3.3.8.3); and

The impact of these factors is that the harvest volumes that are planned on the English River Forest will not be obtained. Moreover, this audit and previous independent forest audits reported on the underachievement of planned yields and the non-availability of substantial area that was allocated for harvest in previous forest management plans. Thus the issues on this forest that lead the audit team to conclude that the planned harvest level is over-estimated, and the planned level of operations is inconsistent with sustainability, have been present for some time. In addition, the audit team observes that the planned conifer harvest in excess of the 2004 plan objective allows the Company to harvest a larger area than would be available if the plan target had been adhered to. Considering that the future harvest is expected to decline, in the view of the audit team, this represents an inappropriate balance between present and future forest benefits. Finally, the audit team notes that the modelled future harvest level does not account for the continued retention of marten cores beyond 60 years, which is another factor that has inflated the projected future wood supply.

2. Licence requirement. As discussed in Section 3.8.1, Section 4 of the SFL requires that *"The Company shall prepare a forest management plan, work schedules, and reports for the English River Forest in accordance with the Crown Forest*

Sustainability Act and the Forest Management Planning Manual, and shall abide by that plan and all other requirements described in that manual and the Crown Forest Sustainability Act." This audit identified many failures associated with the management planning and reporting on the English River Forest. They include:

- The incorrect rationale for the development of the contingency plan (Section 3.3.8);
- The submission of a contingency plan whose operations bore little resemblance to those which were intended to be carried out (Section 3.3.8);
- Deficiencies in the AWS submissions (e.g. incomplete submissions, alterations not addressed in a timely manner) (Section 3.3.9);
- Deficiencies in Annual Report submissions (e.g. incorrect tables, failure to address MNR comments, poor textual descriptions, silviculture treatment prescriptions not identified correctly, variances between the tables and digital map information) (Section 3.6.2); and
- The devolution of decision making regarding key issues in the plan to the Steering Committee, thereby subsuming the role of the planning team.

In addition, inasmuch as the 2004 FMP identifies an unsustainable management regime, the audit team believes that it is not in compliance with the FMPM or the Crown Forest Sustainability Act. Other issues related to deficiencies in planning are identified throughout this report.

Recommendation # 40

The Ministry of Natural Resources should not extend the Sustainable Forest Licence held by Bowater Canadian Forest Products Inc. for the English River Forest for a further five year period.

4 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

This audit reviewed the management of the Brightsand and former English River Forests for the period April 1, 2000 to March 31, 2004 and the management of the amalgamated English River Forest for the April 1, 2004 – March 31, 2005 period. The Brightsand and former English River Forests were managed under separate FMPs until March 31, 2004, and this audit reviewed the adherence of management and operations with the plans. The review included examination of management and operations under the Contingency FMP that went into effect on April 1, 2004, and the 2004 FMP, as well as the processes of preparing these two plans.

The audit has concluded that there were a number of positive features of management during the audit period, including most aspects of the field operations, silvicultural monitoring, training, and working with other forest users, including commitment holders. There are some recommendations and suggestions directed at these aspects of performance in order to further improve them, but the overall impression of the aspects is positive.

The audit has concluded that there were major deficiencies in the development of the 2004 FMP and the associated Contingency FMP, and the audit team has further concluded that the 2004 FMP will not provide the projected wood supply, and so it does not provide for sustainable management of the English River Forest. In addition, the audit team encountered poor performance in the development of Annual Work Schedules and Annual Reports.

The Audit Team notes that in their collective experience, they have participated in approximately 35 independent audits through Ontario's IFA program. The planning situation encountered on the English River Forest is the poorest we have ever encountered.

The audit team observes that the MNR and the Company share responsibility for these deficiencies, and for allowing the development of a mindset that has given rise to such a situation. The operative principle that was shared by the MNR and the Company, and which underlies the situation encountered in this audit, is that the most important responsibility of both organizations is to ensure continuity of the timber harvest. It is understandable why this is an important motivating factor for the Company, and of course the government is very sensitive to the difficult economic conditions faced at present in the Ontario forest sector and their potential impacts in northern Ontario, especially. However, it is the impression of the audit team that this concern was allowed to override the planning mechanisms that are in place to ensure that the benefits from timber harvesting are distributed fairly both now and in the future, and that the ecological components of the forest resource are also sustained.

The result was that expediency became a key factor in decision-making; this is especially noticeable with respect to the labelling of the need for a contingency plan as being due to a delay in FMP approval. This altered the planning requirements and allowed the company to forgo harvesting timber which was identified as being a component of the sustainable harvest in the 2000 FMP, but had become economically unfavourable to access. The Contingency Plan that was approved was incomplete and

was not representative of the intended operations, as a series of amendments soon after approval greatly altered the planned harvest.

The audit team believes that the findings of this audit represent an unfortunate precedent. The situation needs to be remedied by the Company and MNR. One option is to prepare a significant revision to the 2004 FMP. The audit team feels that the MNR and Company will want to take some measures to bring forest management on the English River Forest back to a sustainable basis, and many of the recommendations in this report are intended to support this process.

It is the conclusion of this audit that the 2004 Forest Management Plan does not provide for sustainable management of the English River Forest, and that the planning and reporting components of the SFL were not met by the Company. For these two reasons the licence should not be extended.

Both the MNR and Company have recognized that the planning process as it was implemented in the development of the 2004 FMP was unsatisfactory from a number of perspectives. As noted earlier in this report, during the summer of 2005 senior staff from the Company and MNR, working with their staffs developed detailed plans to address the problems with the last planning process. The Company has reorganized to create a planning structure which it believes will help avoid some of the issues which arose, and the MNR has identified important measures to improve its performance too. As these measures were identified after the audit period, and as the parties have only recently begun to implement them, and so their success is unknown, they are not taken into account in this audit's key findings. However, given the sincere intent of the Company to improve, and the attempts of the Company and MNR to develop a more collaborative relationship, there is obviously cause for optimism that the development of the next plan will be a much more satisfying experience than was the development of the 2004 plan.

In addition, the Company has indicated that they recognize that the yields in the 2004 FMP are overestimated, and that it intends to address this issue expeditiously. The audit team also believes that the Company should review the allocated areas to ensure that there is a realistic probability that they will be economically accessible during the plan period. The Audit Team strongly believes the Company is sincere in its intentions and expects that efforts to address these issues may involve amending the present FMP. However, as the measures are not yet identified, nor implemented, the findings of this audit regarding the sustainability of the present plan stand.

Recommendation # 40 of this audit recommends that Bowater's licence for the English River Forest should not be extended. Due to the time period covered by the SFL, the offset of the audit period and SFL period, and the nature of the administrative processes involved, the recommendations from the previous audits of the former English River Forest and Brightsand Forest to extend the licences have only recently been acted upon. When the licence is extended, based upon the results of the previous audits, the SFL period will be 2003-2023. Therefore this audit's recommendation regarding licence extension will not be acted upon until at least 2008.

Given the fact that this audit has identified some serious deficiencies in the management of the forest, and that the Company and MNR are making sincere attempts to address the issues, the audit team believes the next audit of the forest should occur sooner than the regular five-year interval to provide assurance to the Crown and the people of

Ontario that the management of the forest has improved and is on a sustainable course. Should that audit find that management of the forest is sustainable and has been undertaken in compliance with the licence and all other laws and regulations, the findings of that audit may be considered in conjunction with those of this audit.

We note that in three years, the development of the 2009 FMP will be well underway, the draft plan should have been submitted and there should be sufficient evidence to assess the success of the planning process and the sustainability of the draft plan, so there will be ample opportunity to see how this audit's key concerns have been addressed.

Recommendation # 41

The next Independent Forest Audit of the English River Forest should occur in 2008.

Table 25. Recommendations and suggestions made in this audit.

Principle: Commitment	
Suggestion:	
1. The Company should consider including statements of support for Aboriginal peoples and communities in its Policy Statements.	
Recommendations:	
None	
Principle: Public Participation	
Suggestions	
None	
Recommendations:	
None	
Principle: Forest Management Planning	
Suggestions:	
2. Corporate MNR should develop, with consultation from relevant organizations such as the Ministry of Tourism and NOTO, a statement that clearly identifies the purpose of an RSA and add this statement to relevant guides and RSA information documents.	
3. Corporate MNR should consider developing a role for itself in the review and approval of Contingency Plans and Contingency Plan proposals.	
Recommendations:	
1. In the preparation of the 2009 FMP, the plan author should be a member of task teams (or similar groups) which provide key components of the Forest Management Plan.	
2. The terms of reference for the 2009 FMP should clearly empower the plan author and planning team to make decisions. The use of the steering committee, if included in the 2009 FMP Terms of Reference, should be for addressing strategic issues only.	

3. The planning team for the 2009 FMP should ensure that that Plan contains the required text related to wildlife in the Management Unit Description section.
4. The Company should review the assumptions used to prepare the yield curves used in the 2004 FMP, and the actual harvest yield data, and develop more accurate yield curves for the 2009 FMP.
5. Corporate MNR should revise the direction provided to planning teams which permits broad and extensive declines in wildlife habitat and habitat levels to fall below those predicted to occur in the SFMM benchmark runs.
6. Corporate MNR should provide more definitive direction on acceptable means of setting old growth targets than is presently provided in the Old Growth FMP Note.
7. The Planning Team for the 2009 FMP should use a more appropriate means of setting old growth targets than was used in the 2004 FMP.
8. Corporate MNR should develop a strategy for dealing with the integration of caribou habitat requirements and forest management in instances where caribou are present south of the caribou line.
9. As soon as possible, the MNR and Company should form a task team with the mandate of providing strategic and tactical direction on the long-term integration of caribou and marten habitat with timber management on the English River Forest. Membership on the task team should be broader than MNR Dryden district staff and Bowater personnel.
10. The MNR and Company should resolve ownership and maintenance responsibilities for all roads and water crossings on the English River Forest.
11. The MNR should not accept or review incomplete or inaccurate FMPs or Contingency Plans.
12. The MNR should not approve incomplete FMPs or CFMPs. Conditional approval should be avoided as there are no provisions for it in the FMPM. Formal approval should only be given once all required alterations and all documentation requirements have been satisfied.
13. Future planning teams should ensure that contingency plans provide clear linkages to sustainability assessments and plan objectives that direct their operations.
14. Future planning teams should ensure that adequate notice is provided prior to all stages of planning in which the public has opportunities to review planning-related products.
15. The MNR should not approve amendments until all required alterations and all documentation requirements have been satisfied.
16. The MNR shall forward copies of appropriate amendments to all plan copy locations as per the requirements of the FMPM.
17. Bowater should ensure that AWSs are in accordance with the approved FMP upon submission and should not submit AWSs until all planning requirements have been completed and accurately depicted.
18. The MNR should not accept or review incomplete or inaccurate AWSs.
19. The MNR should not approve incomplete annual work schedules. Formal approval should only be given once all required alterations and all documentation requirements have been satisfied.

20. The Company should ensure that All AWS approval pages are stamped by the R.P.F. to certify the silviculture prescriptions or FOPs as per FMPM requirements.
21. The MNR should ensure that the FMPM notification requirements for trappers and mining claim holders are met and keep appropriate documentation as part of the public consultation record.

Principle: Plan Implementation**Suggestion:**

4. The Company should consider taking advantage of opportunities to harvest within riparian AOCs more often, where permitted by the Fish Habitat Guidelines.
5. Bowater staff should continue to work with staff from Buchanan to provide legible operations maps.
6. The Company and MNR should identify a strategy for the use of a spatial wood supply model in the development of the 2009 English River FMP.

Recommendations:

22. The Company should continue to develop techniques for managing chipper piles.
23. The Company should conduct a field check of its slash pile management program to assess whether its status is satisfactory and ensure that, if there are problems, they be resolved prior to the next Independent Forest Audit.
24. The Company should produce separate tables for salvage harvesting and for normal harvesting operations in Annual Reports as required.
25. As part of the process of identification of the available timber supply on the English River Forest, the Company and MNR should identify and subtract from the 2004 Forest Management Plan those stands which are not economically operable.
26. Corporate MNR should allocate sufficient resources so as to facilitate timely approval of spatial wood supply models in forest management planning.
27. The Company should take necessary measures to ensure that all areas harvested during the 1999-2004 FMP term for the Brightsand Forest, and the 2000-2005 FMP term for the former English River Forest receive appropriate renewal treatments during the current FMP term (2004-2009) for the English River Forest.
28. Bowater should take appropriate measures to ensure that the reporting of natural regeneration will substantially meet the 2004 FMP forecasts on an annual basis.

Principle: Systems Support**Suggestions:**

None

Recommendations:

29. MNR and Bowater should continue to work at improving their relationship to improve the overall quality of management of the Forest.

Principle: Monitoring**Suggestions:**

7. The Company should develop tools to better integrate silvicultural monitoring information into

the preparation of future FMPs.

Recommendations:

30. Corporate MNR should provide financial resources sufficient to address its compliance mandate.
31. The Company should include a comprehensive description of the strategies used by its on-site supervisors to monitor contractor compliance in the annual compliance plans. Bowater field supervisors should add comments to the review and approval section of compliance reports that outline their compliance activities (approved map sign off, regular on-site supervision, joint inspections, etc.) when approving contractor reports.
32. The Company should report all non-compliances according to the required timelines outlined in the compliance guidelines and compliance plans. The Company should take prompt action in addressing non-compliance issues and compliance orders as agreed to with the MNR.
33. The Company should provide a detailed review and analysis of the past compliance results in the annual reports. The annual reports should also document the Company's progress in taking action to address non-compliance issues and compliance orders.
34. The Company and MNR staff should meet annually to review the previous year's compliance results and develop compliance priorities for the current year's Annual Work Schedule. The analysis of past compliance history should also be reflected in the compliance strategies and targets in the annual compliance and five year compliance strategies.
35. The Company should identify any remaining backlog area requiring free-to-grow assessment and ensure that these sites are scheduled for the appropriate surveys during the current FMP term (2004-2009).
36. The Company should ensure that the final submission date appears on the approval pages of the FMP, AWS's and Annual Reports.
37. By March 31, 2006, the MNR and Bowater shall review the status of the 2001-02, 2002-03, 2003-04 and 2004-05 annual reports and identify a schedule for their completion.
38. The audit team strongly recommends that Corporate MNR revise the 2004 FMPM to require MNR review of all annual reports and consider alternate ways to handle relevant workload issues.

Principle: Achievement of Management Objectives and Forest Sustainability

Suggestions:

None

Recommendations:

None

Principle: Licence Obligations

Suggestions:

None

Recommendations:

39. The MNR and Company should meet the required schedule for submission status report associated with this audit.

40. The Ministry of Natural Resources should not extend the Sustainable Forest Licence held by Bowater Canadian Forest Products Inc. for the English River Forest for a further five year period.

Conclusion

41. The next Independent Forest Audit of the English River Forest should occur in 2008.

It is the conclusion of this audit that the 2004 Forest Management Plan does not provide for sustainable management of the English River Forest, and that the planning and reporting components of the SFL were not met by the Company.

Appendix A: Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

This appendix was written by Staff of Bowater Inc. It is included as part of this report as per the requirements of the IFAPP.

Comparison and Trend Analysis of Planned versus Actual Operations Performed

for the

English River Sustainable Forest License Areas

as Required by the Independent Forest Audit Process and Protocols 2005

Prepared by: John Millar

Under the Direction of: John Lawson R.P.F.

Signature: _____



Date: Nov 7, 2005

Comparison and Trend Analysis of Planned versus Actual Operations Performed for the English River Sustainable Forest License Areas

Introduction

The completion of the comparison and trend analysis report is a required component of the Independent Forest Audit (IFA) process outlined in the Independent Forest Audit Process and Protocols document compiled by the Ontario Ministry of Natural Resources. The comparison and trends analysis for the English River Independent Forest Audit covers the Forest Management Plan in place April 1, 2004 and the previous Forest Management Plans for the English River Forest (2000-2005), and Brightsand Forest (1999-2004). The comparison and trend analysis report also covers the previous Timber Management Plans for the English River Forest (1995-2000) and Brightsand Forest (1994-1999).

The current English River Forest is an amalgamation of the Brightsand Forest (SFL License # 542454) and the English River Forest (SFL License # 542453). The amalgamation of the Brightsand and English River Forests occurred in the current Forest Management Plan (FMP). The newly amalgamated forest maintains the name English River Forest and the previous sustainable forest license (SFL) number 542453. The forest production landbase, which includes all working groups, barren and scattered, and depleted areas for the Crown managed forest currently is 780,912.9 hectares, with a total Crown landbase size of 1,132,481.4 hectares. The total Crown landbase includes all Crown parks, unmanaged, and managed land. The final year of the English River FMP (2000-2005) was not implemented due to the expiration of the operational five-year term for the Brightsand Forest and the amalgamation of the English River and Brightsand Forests.

The following comparison and trend analysis report compares aspects of forest management which include the total area under management (Table 1), description of forest units (Table 2 a-f), planned and actual harvest volumes (Table 3), and planned and actual harvest area (Table 4). The Crown production forest area by forest unit and age class (Table 5 a-e), report on renewal, tending, and protection operations (Table 6 a-c), and the harvested area successfully regenerated (Table 7) are also reviewed in this report. The report discusses the history of licensing, management planning, inventory updates, and forest unit changes overtime.

A caution to the reader: Tables 3, 4, and 6 a-c contained in this report are the planned and actual harvest volume, area harvested tables, and report on renewal, tending, and protection. The values used in this report associated with the 2003-2004, and 2004-2005 periods were compiled using Bowater's GIS and best available information. At the time of compilation of this document, the annual reports for the 2003-2004 period had only been recently submitted to the OMNR and not yet accepted. In accordance with direction provided by the 2004 Forest Management Planning Manual (FMPM) the annual report covering the period 2004-2005 is not due until the fall of 2005. Any changes to

the 2003-2004 annual reports and the 2004-2005 compiled figures will likely be minor in nature.

History of Licensing

The following summary gives the license history for the English River and Brightsand Forests:

Year(s)	History	Forest
1955/1956	- Brightsand Forest first obtained from the Crown under license D - 1619 Parcel A	Brightsand
1957 to 1961	- Acquisition of license 2058 - Parcel 3 and license 2390 - Parcel 4 (Sowden and McDougall Limit)	Brightsand
1963	- License D 2058 is formed through the amalgamation of license D - 1619 Parcel A, license 2058 - Parcel 3 and license 2390 - Parcel 4	Brightsand
1971	- License D 2058 changes to license 328100 and for a short period of time to license 460700	Brightsand
Prior to 1980	- Managed as Working Circle 4 of Great Lakes Forest Products License 328100 - Schedule C, and license 328100 - Schedule A parcel 1	English River
1980	- Forest Management Agreement #500300 signed in 1980. Forest boundaries later adjusted in 1985	English River
1985	- License 328100 is designated as a Forest Management Agreement Area - License #502500 the area was called the Brightsand Forest	Brightsand
1998	- Brightsand FMA is designated as a Sustainable Forest License (SFL) #542454 and maintains the name Brightsand Forest	Brightsand
1998	- English River FMA is designated as a Sustainable Forest License (SFL) # 542453 and maintains the name English River Forest	English River
2004	- The Brightsand SFL #542454 and English River SFL #542453 amalgamated and maintain the name English River Forest and SFL license #542453	English River / Brightsand

History of Forest Management Planning

The following is the history of management planning (Timber and Forest Management Plans) for the English River and Brightsand Forest, compiled from available documents.

Years	Plan Type	Forest
1965-1985	Forest Management Plan	Brightsand Forest
1970-1990	Forest Management Plan	Brightsand Forest
1975-1995	Forest Management Plan	Brightsand Forest
1980-2000	Forest Management Plan	Brightsand Forest
1985-2005	Forest Management Plan	Brightsand Forest
1989-2010	Timber Management Plan	Brightsand Forest
1994-2014	Timber Management Plan	Brightsand Forest
1995-2015	Timber Management Plan	English River Forest
1999-2019	Forest Management Plan	Brightsand Forest
2000-2020	Forest Management Plan	English River Forest
2004-2024	Forest Management Plan	English River Forest

Note: Earlier FMP's (prior to 1994) and TMP's were focused on the management of the timber resource. The FMP's (post 1996) placed greater emphasis on the management of non-timber values than previous FMP's and TMP's.

Summary of Total Land Area

The change in total landbase area between the combined 1994/1995 Brightsand and English River TMP's and the current 2004 English River FMP can be attributed to the factors outlined below:

- Removal of a small portion of Wabakimi Park completely from the landbase
- Removal of the Gulliver River Conservation Reserve.
- Removal of the Campus Lake Conservation Reserve
- Removal of the Upper English River Conservation Reserve
- Removal of the Willow Lake Conservation Reserve
- Removal of the East English River Provincial Park
- Sandbar Lake Provincial Park addition
- Turtle River White Otter Provincial Park addition
- Adjustments to management unit boundaries
- Re-projection from Lambert to NAD 83 UTM Zone 15
- Addition of Abitibi-Consolidated block 2
- Introduction of the 1996 Forest Resource Inventory
- Changes in forest management planning documentation specifically the classification of managed versus unmanaged forest types

The overall landbase (Crown Land) declined by 69,036.4 hectares or 6.1 percent when the combined 1994/1995 Brightsand and English River TMP's are compared to the 2004 English River FMP.

The Forest Management Planning Manual (FMPM) was introduced prior to the 1999 and 2000 Brightsand and English River FMP's, and was designed to replace the Timber Management Planning Manual (TMPM). The FMPM ratified changes in aspects of forest management planning including requirements for reporting. Prior to the introduction of the FMPM the TMPM did not require the separation of the areas associated with depletions from the areas associated with B&S/NSR (Barren and Scattered and Not Satisfactorily Regenerated). The FMPM required that areas, which were depleted (natural and artificial), were reported separate from B&S/NSR. The 2000 English River FMP production landbase was also affected by a change in area from the acquisition of Block 2 from Abitibi-Consolidated.

The 2004 English River FMP was completed using a new Forest Resource Inventory (FRI). The introduction of the new FRI affected the area associated with the land types (non-forested, non-productive, B&S, depleted, working group species, etc.), which occurred on the landbase. The new FRI changed, moved, created, and removed areas that were associated with land types from the 1976 inventory. The introduction of Ontario's Living Legacy (OLL) Land Use Strategy occurred during the 2004 English River FMP. The goal of the OLL Land Use Strategy was to increase the areas associated with parks and protected areas on Crown land across Ontario. The introduction of the OLL Land Use Strategy to the English River Forest subsequently removed areas from the total landbase and production landbase through the addition to and creation of provincial parks, and conservation areas. The area associated with the total landbase was also affected by the removal of the area associated with Wabakimi Park.

The 2004 English River FMP experienced changes to the forest management unit boundaries of the English River Forest. The Ontario Ministry of Natural Resources (OMNR) performed the adjustments to the forest management unit boundaries for the Northwest Region of the OMNR, which was delivered to Bowater Inc. on February 8, 2002. The adjustment to the forest management unit boundaries was performed to remove gaps and areas of over-lap between the management units in the Northwest region and across Ontario. This adjustment to the management unit boundaries resulted in changes to the area associated with the English River Forest.

Table 1 displays the summary information of the total area under management for the Brightsand (BR) and English River (EN) Forests for the three planning periods under review in the English River Independent Forest Audit (IFA). The total production forest for the 2004-2009 English River FMP increased by 22,592.9 hectares when compared to the production forest area of the combined 1994/1995 Brightsand and English River TMP's. The total forested land type decreased by 20,035.0 hectares.

The non-productive land type for the combined 1994/1995 Brightsand and English River TMP's, combined 1999/2000 Brightsand and English River FMP's, and the 2004 English River FMP are 101,012.0, 80,851.0, and 55,884.0 hectares respectively. The general trend displayed in Table 1 is a decrease in area associated with the land type non-productive. The overall change in non-productive area was 45,128.0 hectares or 44.7 percent of the combined 1994/1995 Brightsand and English River TMP's. The decrease in area associated with the non-productive forest type is due to the implementation of the new forest inventory. The non-productive land type was composed of treed muskeg, open muskeg, brush & alder and rock. Areas once classified into these land types were reclassified during the new inventory.

The protection land type (Site Class 4 & 5, and Islands) for the combined 1994/1995 Brightsand and English River TMP's was 11,992.0 hectares. The area of protection land type decreased by 3,060.7 hectares between the combined 1994/1995 TMP's and the combined 1999/2000 Brightsand and English River FMP's. The total area of protection forest associated with the combined 1999/2000 Brightsand and English River FMP's was 8,931.3 hectares for the Crown Managed Land Ownership. For comparison purposes this value will not be utilized. The calculation of protection forest area for the Crown Managed and Unmanaged was performed for comparison purposes with the combined 1994/1995 Brightsand and English River Forests. The combined 1999/2000 Brightsand and English River FMP's for the Crown Managed and Unmanaged Land Ownership for protection forest was 15,339.9 hectares. The increase in area of protection forest was due to the removal of area associated with exclusions from the landbase for the combined 1994/1995 Brightsand and English River TMP's. These areas were removed from the landbase in order to exclude the areas from the calculation of MAD (Maximum Allowable Depletion). The areas removed were then reintroduced into the combined 1999/2000 Brightsand and English River FMP's. This makes the comparison between values associated with the combined 1994/1995 Brightsand and English River TMP's and the combined 1999/2000 Brightsand and English River FMP's difficult.

The comparison between the protection land type for the combined 1999/2000 Brightsand and English River FMP's and the 2004 English River FMP was performed through the use of the Crown Managed Land Ownership. The area associated with protection land type for the 2004 English River FMP is 14,492.1 hectares which is an increase of 5,560.8 hectares when compared to the values for the combined 1999/2000 English River FMP's. The increase in area can be attributed to the completion and implementation of the new Forest Resource Inventory.

Figure 1 displays the changes in area that have occurred over time for each working group species in the English River Forest. The area associated with each of the working group species for the terms 1994-1999 Brightsand and 1995-2000 English River were developed through the combination of the values from the two TMP's for the purposes of comparison with the current English River FMP. The areas associated with the 1999-2004 Brightsand and the 2000-2005 English River Forests were combined for comparison purposes with the current English River FMP (2004-2009).

The area associated with eastern white cedar (*Thuja occidentalis* L.) and larch (*Larix laricina* [Du Roi] K. Koch) increased from zero to 7,581.3 and 982.6 hectares respectively between the combined 1994/1995 Brightsand and English River TMP's and the current English River FMP (2004). The increase in area was caused by a change in the classification and the introduction of a new inventory. The classification change was attributed to changing the other conifer (OC) working group into cedar and larch. The introduction of the 1996 inventory also affected the area values associated with these two forest units. The updated inventory also significantly affected the area associated with jack pine (*Pinus banksiana* Lamb.), spruce (*Picea spp.*), poplar (*Populus spp.*) and white birch (*Betula papyrifera* Marsh.). The jack pine, spruce, poplar and white birch area values increased by 6,898.4, 36,269.3, 13,238.8 and 3,267.9 hectares respectively when the 2004 English River FMP is compared to the combined 1994/1995 Brightsand and English River TMP's. The values associated with black ash (*Fraxinus spp.*) and soft maple (*Acer spp.*) increased from zero to 17.9 and 31.7 hectares respectively when the 2004 English River FMP is compared to the combined 1994/1995 Brightsand and English River TMP's. The increase in these two forest units was due to the introduction of the new inventory and the classification of these two species from the inventory. The area associated with the balsam fir (*Abies balsamea* L.) working group has steadily decreased from 4.8 percent to 0.3 percent of the total production forest. The significant decline in the area associated with balsam fir can be attributed to the infestations of spruce budworm (*Choristoneura fumiferana* [Clemens]) during this period. The white pine (*Pinus strobes* L.), and red pine (*Pinus resinosa* Ait.) areas maintain a consistent area across the three planning periods.

The B&S/NSR and depleted forest units in Table 1 and Figure 1 display a significant difference in values associated with area. The combined 1994/1995 Brightsand and English River TMP's display considerable differences in area associated with barren and scattered when compared to the other FMP's. The drastic change in the area of B&S/NSR can be attributed to the changes in required documentation between the TMPM (Timber Management Planning Manual) and the FMPM (Forest Management Planning Manual). The introduction of the FMPM altered the required reporting for depleted areas (natural, artificial) and B&S/NSR. Prior to the FMPM the TMPM required that depleted areas were reported as barren and scattered until they were reintroduced into the inventory as free-to-grow (FTG). The introduction of the FMPM required the separation of the two classes into B&S/NSR and depleted.

2005 Independent Forest Audit
Table 1 - Summary of Total Area Under Management
English River Forest and Brightsand Forest
Past and Current Plans - Crown Managed

Land Type	Area in hectares		
	Past Plans		Current
	1994-1999 BR 1995-2000 EN	1999-2004 BR 2000-2005 EN	2004-2009
Non-Forested			
Water	186,805.0	163,216.5	171,756.9
Other Land	5,316.0	4,239.9	7,591.6
Forested			
Non-productive	101,012.0	80,851.0	55,884.0
Productive	770,312.0	0.0	0.0
Protection	11,992.0	8,931.3	14,492.1
Production Forest			
B&S / NSR	136,150.0	12,841.7	16,107.5
Depleted	0.0	171,379.6	110,963.6
Working Group			
Pw	539.0	440.8	455.4
Pr	254.0	288.3	266.9
Pj	250,747.0	237,299.1	257,645.4
S	257,472.0	220,907.8	293,741.3
B	36,454.0	32,173.1	2,243.6
A	0.0	0.0	17.9
Ce	0.0	515.1	7,581.3
La	0.0	46.5	982.6
OC	2,335.0	2,414.5	0.0
Po	51,605.0	52,122.9	64,843.8
Bw	22,764.0	21,260.9	26,031.9
Ms	0.0	0.0	31.7
Total Production Forest	758,320.0	751,690.3	780,912.9
Total Forested Land	871,324.0	841,472.6	851,289.0

Source: Brightsand TMP 4.8.2 (1994-1999), FMP 1-2 (1999-2004), English River TMP 4.8.2 (1995-2000), FMP 1-2 (2000-2005, 2004-2009)

Note: 1994/1995 Brightsand and English River TMP's values were calculated through the use of TMP Table 4.8.2 which is a combination of Crown Managed and Unmanaged land ownership

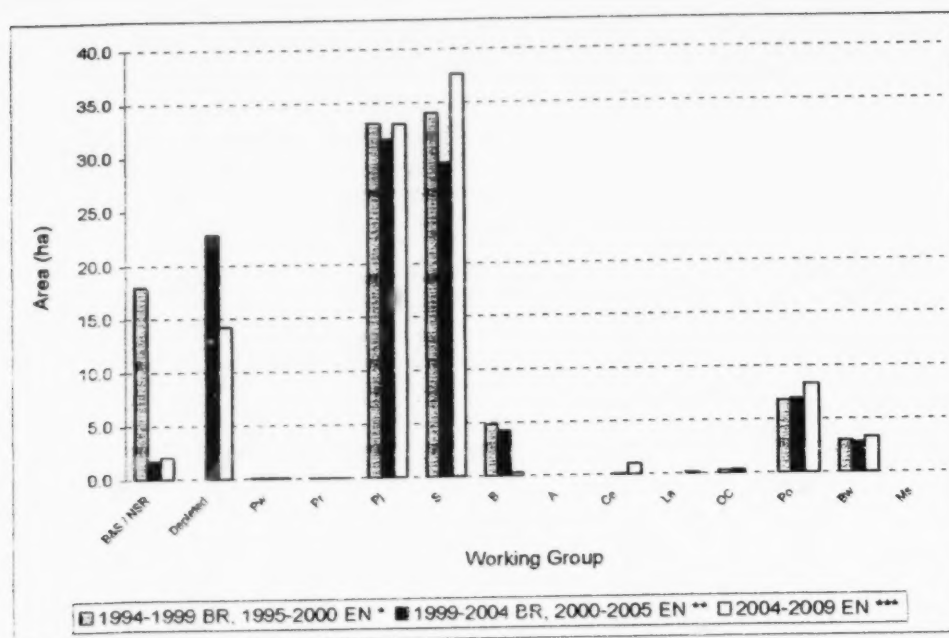


Figure 1. Working group as a percentage of the total production forest

Source: Brightsand TMP 4.8.2 (1994-1999), FMP 1-2 (1999-2004), English River TMP 4.8.2 (1995-2000), FMP 1-2 (2000-2005, 2004-2009)

Inventory Updates for Forest Management Planning

English River FMP 2004-2009

The inventory utilized during the 2004-2009 English River FMP is based on the 1996 FRI completed by the OMNR. The new FRI reflects the latest stand conditions and includes ecosite mapping of the area. The new FRI is based on 1983 landbase water features, 1996 photography and 1997 interpretation, and intensive field samples (Gannon 2004). Updates to the 1996 FRI were performed annually for harvest depletions, recent natural depletions, and areas declared FTG. The mapping of natural and harvest depletions were performed through the use of satellite imagery and transferred into the GIS annually.

Data captured in Lambert form was converted to NAD 83 (North American Datum) to allow the projection of the data to be the same as the new FRI. The data that was converted from Lambert to NAD 83 were the depletions prior to the current plan both natural and harvest. The silvicultural data from the Silviculture Records System (SRS), FTG areas, and the current digital FMP were also converted to NAD 83.

English River FMP 2000-2005, Brightsand FMP 1999-2004, English River TMP 1995-2000 & Brightsand TMP 1994-1999

The update of the 1976 Forest Resource Inventory was performed annually with the use of harvest, recent natural depletions and areas that were declared FTG. The natural and harvest depletions were mapped through the use of SAP (Supplemental Aerial Photography) and satellite imagery, which were then transferred into the GIS annually. The mapped depletions were entered into Annual Reports (AR's) which were then reviewed and accepted by the OMNR. The areas within the inventory that were not depleted were updated to the current year. The year of origin for the stand was subtracted from the current date and the stand age was updated to allow for the inventory update. This allowed for the calculation of the stands current age. During the production of the combined 1999/2000 Brightsand and English River FMP's the new FRI was under development by the OMNR.

Forest Unit Changes Over-Time

English River FMP 2004-2009

The current English River FMP (2004-2009) utilizes the thirteen forest units from the previous English River FMP for the description of the forest. The reformatting of the forest units was performed to create a set of standardized forest units for the newly amalgamated English River Forest. The previous Brightsand FMP 1999-2004 included three forest units that were created for SFMM (Strategic Forest Management Model) modeling these are the NFG (not-free-to-grow), IS (Islands), and M11 (moose leave blocks). The moose leave blocks were created to ensure the areas included in FMP Table 1 were incorporated in the model. The M11 forest unit was created to allow for the modeling of former moose leave blocks that were to be harvested for the purposes of Caribou management. The forest units created for SFMM modeling were not utilized in the 2004 English River FMP.

The forest units utilized in the 2004-2009 English River FMP are divided into three distinct categories, based on their forest type; these are conifer forest units, mixed forest units and intolerant hardwood forest units. The conifer forest units consist of spruce (SPL, SPU) both black and white spruce, jack pine (PJ1), other conifer (OC1), balsam fir (BF1), white pine (PW1), and red pine (PR1). The mixed forest units consist of mixed conifer one (MC1), mixed conifer two (MC2), other hardwood (OH1), and mixed hardwood (MH1). The intolerant hardwood forest units consist of poplar (PO1) and white birch (BW1) forest units. Table 2a displays the working group species and typically implemented silvicultural systems, site types, forest types, and FRI parameters and criteria utilized to define the forest units from the FRI.

Two major differences exist between the current English River FMP (2004-2009) and the past English River FMP (2000-2005) and Brightsand FMP (1999-2004) in terms of forest units. The key differences include the addition of ecosite typing and the query statements used in breaking out and assigning forest units to stands. The current English

River forest units are based on ecosite typing which is generated directly from the new inventory (1996). This allows for the separation of forest units through the use of ecosites and species composition instead of working group species and site class combinations. The second difference was the adjustment of the breakpoints which were performed from parameters in the current FRI for the MC1 and MC2 forest units (Gannon 2004). The break point adjustment was designed for the forest unit separation and determining which forest unit a particular stand falls within. The definitions and criteria for the creation of the forest units for the English River FMP 2004-2009 are found in Table 2a. The connection between forest units from the current English River FMP and past FMP's and TMP's can be found in Table 2f.

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 Table 2 - Description of Forest Units (FMP 8)
 English River Forest
 Plan Term April 1, 2004 To March 31, 2009

Forest Unit		Forest Type	Main Working Group	Site Type(s)	Silvicultural System	FRI Parameters & Criteria
Code	Name					
PR1	Red/White Pine	Conifer	Red Pine	ES15 Red Pine - White Pine ES18 Red Pine - White Pine ES20 Red Pine - White Pine	Clearcut	Pr >= 30%
PW1	White Pine	Conifer	White Pine	ES15 Red Pine - White Pine ES18 Red Pine - White Pine	Clearcut	Pw >= 30%
OH1	Other Hardwood	Mixed	Mixed	ES19 Hardwood-Fir-Spruce Mixedwood ES36 Intermediate Swamp ES38 Rich Swamp	Clearcut	Po + Bw + Ah + MH + Bd + EL + Yb + Ms >= 30%
OC1	Other Conifer	Conifer	Cedar/Larch	ES17 White Cedar (Oc only) ES30 Intermediate Swamp (Oc only) ES37 Rich Swamp Cedar (Oc only)	Clearcut	Ce + La >= 60%
SPL	Spruce Lowland	Conifer	Spruce	ES35 Poor Swamp: Black Spruce ES36 Intermediate Swamp: Black Spruce	Clearcut	Ecosite in {34,35,36} or Ecosite = 37 and Sb >= 7
PJ1	Jack Pine	Conifer	Jack Pine	ES20 Spruce-Pine / Feathermoss (Pj only) ES21 Fir-Spruce Mixedwood (Pj only) ES12 Black Spruce-Jack Pine (Pj only) ES13 Jack Pine-Conifer (Pj only)	Clearcut	Pj >= 60% and Po <= 20%
PO1	Poplar	Intolerant Hardwood	Poplar	ES16 Hardwood-Fir-Spruce Mixedwood (Po only) ES19 Hardwood-Fir-Spruce Mixedwood (Po only) ES28 Hardwood-Fir-Spruce Mixedwood (Po only)	Clearcut	Po >= 70%
BW1	White Birch	Intolerant Hardwood	White Birch	ES12 Black Spruce-Jack Pine (Bw only) ES16 Hardwood-Fir-Spruce Mixedwood (Bw only) ES19 Hardwood-Fir-Spruce Mixedwood (Bw only)	Clearcut	Bw >= 70%
BF1	Balsam Fir	Conifer	Balsam Fir	ES21 Fir-Spruce Mixedwood (Bf only) ES22 Spruce-Pine/Ledum/Feathermoss (Bf only) ES31 Spruce-Pine / Feathermoss (Bf only)	Clearcut	Bf >= 60%
SPU	Spruce Upland	Conifer	Spruce	ES20 Spruce-Pine / Feathermoss (Sp only) ES21 Fir-Spruce Mixedwood (Sp only) ES22 Spruce-Pine/Ledum/Feathermoss (Sp only) ES31 Spruce-Pine / Feathermoss (Sp only)	Clearcut	Wg = Sb or Sw, and Sb + Sw >= 70% and Po+Bw
MC1	Mixed Conifer 1	Mixed	Mixed	ES20 Spruce-Pine / Feathermoss ES21 Fir-Spruce Mixedwood ES22 Spruce-Pine/Ledum/Feathermoss	Clearcut	Sb+Sw+Bf+Pj+Pr+Pw+Ce+La >= 50% and Po <= 20% and and Po+Bw <= 30%
MC2	Mixed Conifer 2	Mixed	Mixed	ES14 Pine-Spruce Mixedwood ES21 Fir-Spruce Mixedwood	Clearcut	Sb+Sw+Bf+Pj+Pr+Pw+Ce+La >= 60% Or Sb+Sw+Bf+Pj+Pr+Pw+Ce+La >= 50%, and working
MH1	Mixed Hardwood	Mixed	Mixed	ES16 Hardwood-Fir-Spruce Mixedwood ES19 Hardwood-Fir-Spruce Mixedwood ES21 Fir-Spruce Mixedwood	Clearcut	Ah + Mh + Bd + El + Yb + Ms >= 50%

Source: English River Forest Management Plan 2004 - 2009, FMP Table 8

English River FMP 2000-2005

The English River FMP (2000-2005) utilized twelve forest units for the division of the forest into unique forest stands. The twelve forest units were separated into four distinct categories these were conifer, mixedwood, intolerant hardwood, and tolerant hardwood. The conifer forest type consisted of jack pine, balsam fir, other conifer, red pine, white pine, spruce upland, and spruce lowland and shallow soils or PJ, BF, OC, PR, PW, SPU, and SPL forest units respectively. The mixedwood forest type had a total of three forest units these were mixed conifer one, mixed conifer two, and mixed hardwood, or MC1, MC2, and MH respectively. The tolerant hardwood forest type consists of the poplar and white birch forest units or PO, and BW. The intolerant hardwood forest type consisted of one forest unit, which was other hardwood or OH. During the 2000 English River FMP there was no area associated with the OH forest unit the creation of this forest unit was to maintain the regional consistency in forest unit definitions. The separation of the forest units was based on three criteria. The three criteria were created due to changes in the provincial forest management planning process and provincial policy. The criterion used for the separation of the forest units was species composition, stand dynamic trajectory, and silvicultural system utilized (Lawson 2000).

The English River FMP (2000-2005) utilized forest units that were significantly different from the forest units utilized in the English River TMP (1995-2000). The introduction of the mixedwood forest units allowed for the separation of forest stands that exhibited a pure forest composition from those that exhibited a mixedwood composition. Forest units utilized in the 2000-2005 English River FMP were based on stand species composition whereas the forest units for the English River TMP (1995-2000) were based on a working group classification. The working group classification created forest units generated from the presence of dominant species in the stand. The determination of the dominant species was based on basal area associated with each species within the stand (Lawson 2000).

The English River FMP (2000-2005) Table 8 was utilized for the creation of Table 2b. The forest units displayed in Table 2b are significantly different from the forest units displayed in Table 2d (English River TMP 1995-2000). The forests units displayed in Table 2d are SPO, PJO, POO, OCO, BFO, BWO, and PW/PR. The English River FMP (2000-2005) further divided the SPO forest unit into SPU and SPL. The PW/PR forest unit was further divided into the PR and PW forest units. The existing PJO, POO, OCO, BFO, and BWO were converted to PJ, PO, OC, BF, and BW respectively. The 2000-2005 English River FMP introduced mixedwood forest units (MH, MC1, and MC2) which were generated from criteria used to distinguish the mixedwood stands from pure stands through the use of attributes contained in the FRI. The 2000-2005 English River FMP also introduced the intolerant hardwood forest type and the other hardwood forest unit. Descriptions of forest units for the English River FMP (2000-2005) are displayed in Table 2b. The connection between forest units from the current English River FMP and past FMP's and TMP's can be found in Table 2f.

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 Table 2b - Description of Forest Units (FMP II)
 English River Forest
 Plan Term April 1, 2000 To March 31, 2005

Code	Forest Unit Name	Forest Type	Mean Working Group	Site Type(s)	Silvicultural System	FRI Parameters & Criteria	Additional Information
OH	Other Hardwood	Tolerant Hardwood		ES30 Black Ash Hardwood ES38 Rich Swamp	Clearcut	$P_{y+M+A} \geq 0.3$	Great Lakes St. Lawrence transition species. No area is currently in or projected to be in this forest unit during the period of this plan. This forest is required to maintain regional consistency in forest unit definitions, and is included to accommodate potential areas in the future.
OC	Cedar and Larch	Conifer		ES17 White Cedar ES37 Rich Swamp Cedar (Other Conifer)	Clearcut	$C+L \geq 0.5$	Cedar and larch dominated
SPL	Spruce Lowland	Conifer	Black Spruce	ES34 Treed Bog Black Spruce/ Sphagnum ES35 Poor Swamp Black Spruce ES36 Intermediate Swamp Black Spruce	Clearcut	$Sb \geq 0.7$ & $SC \geq 3, 4$ or $WG = Sb + C + L \geq 0.1$ or $Sprl \geq 0.5$ & $SC \geq 2$	Black spruce lowlands either spruce dominated on poor site classes, associated with OC, or 100% Sb on SC 2.
RJ	Jack Pine Pure	Conifer	Jack Pine	ES12 Blk Spruce-Jack Pine Very Shallow (P) only ES13 Jack Pine - Conifer ES14 Pine - Spruce Mixedwood ES20 Spruce - Pine / Feathermoss ES26 Pine - Spruce / Feathermoss	Clearcut	$P_{y+M} \geq 0.5$ & $P_{o+M} \geq 0.2$	Jack pine stands with minimal poplar
PO	Poplar	Intolerant Hardwood	Poplar	ES16 Hardwood - Fir - Sp Mixedwood (Po only) ES19 Hardwood - Fir - Sp Mixedwood (Po only) ES23 Hardwood - Fir - Spruce Mixedwood ES28 Hardwood - Fir - Spruce Mixedwood ES29 Hardwood - Fir - Spruce Mixedwood	Clearcut	$P_{o+M} \geq 0.7$	Poplar dominated stands (primarily aspen)
Bw	White Birch Pure	Intolerant Hardwood	White Birch	ES16 Hardwood - Fir - Sp Mixedwood (Po only) ES19 Hardwood - Fir - Sp Mixedwood (Po only) ES26 Hardwood - Fir - Spruce Mixedwood	Clearcut	$Bw \geq 0.7$	White Birch Dominated Stands
Bf	Balsam Fir Pure	Conifer	Balsam Fir	ES21 Fir - Spruce Mixedwood ES27 Fir - Spruce Mixedwood ES32 Fir - Spruce Mixedwood	Clearcut	$Bf \geq 0.5$	Balsam Fir dominated stands
UPU	Spruce Upland	Conifer	Black Spruce	ES12 Blk Spruce-Jack Pine Very Shallow (P) only ES20 Spruce - Pine / Feathermoss ES22 Spruce - Pine / Lignum / Feathermoss ES26 Spruce - Pine / Feathermoss ES31 Spruce - Pine / Feathermoss	Clearcut	$WG = Sh + SW + Sb + Sw \geq 0.7$ & $P_{o+M} \geq 0.2$	Upland spruce (primarily black spruce, but captures white spruce) where hardwood component is minimal
MC1	Mixed Conifer One	Mixedwood		ES14 Pine - Spruce Mixedwood ES20 Spruce - Pine / Feathermoss ES22 Spruce - Pine / Lignum / Feathermoss ES26 Pine - Spruce / Feathermoss ES26 Spruce - Pine / Feathermoss ES31 Spruce - Pine / Feathermoss	Clearcut	$Sb + Sw + Bf + P_{y+M} + P_{o+M} + C + L \geq 0.5$ & $P_{o+M} \geq 0.2$	Mixed conifer dominated stands with minimal poplar component (10 percent)
MC2	Mixed Conifer Two	Mixedwood		ES21 Fir - Spruce Mixedwood ES27 Fir - Spruce Mixedwood ES32 Fir - Spruce Mixedwood	Clearcut	$Sb + Sw + Bf + P_{y+M} + P_{o+M} + C + L \geq 0.5$ & $P_{o+M} \geq 0.5$	Mixed conifer dominated stands with a significant poplar component (30 percent)
MH	Mixed Hardwood	Mixedwood		ES16 Hardwood - Fir - Sp Mixedwood (Po only) ES19 Hardwood - Fir - Sp Mixedwood (Po only) ES23 Hardwood - Fir - Spruce Mixedwood ES28 Hardwood - Fir - Spruce Mixedwood ES29 Hardwood - Fir - Spruce Mixedwood ES33 Hardwood - Fir - Spruce Mixedwood	Clearcut	$P_{o+M} + Bw + OH \geq 0.5$	Mixed hardwood dominated stands
PR	Red Pine	Conifer	Red Pine	ES11 Red Pine - White Pine ES15 Red Pine - White Pine ES18 Red Pine - White Pine ES24 Red Pine - White Pine	Clearcut	$P_{y+M} \geq 0.3$	
PW	White Pine	Conifer	White Pine	ES11 Red Pine - White Pine ES15 Red Pine - White Pine ES18 Red Pine - White Pine ES24 Red Pine - White Pine	Clearcut	$P_{o+M} \geq 0.3$	

Source: Brightview Forest Management Plan 1999-2004, FMP Table 8

Brightsand FMP 1999-2004

The forest units used for the completion of the Brightsand 1999-2004 Forest Management Plan (FMP) reflected a change in the provincial forest management planning process. The forest units utilized are based on the distinction of stands through the use of ecosites, similarity of stand characteristics, development, silviculture, and characteristics which were identifiable from the 1976 forest resource inventory. The Brightsand FMP utilized a total of thirteen forest units these were SP1, SP3, PJ2, PJ3, BF, PO2, PO3, BW, OC, PR, IS, NFG, and M11. The 1994-1999 Timber Management Plan utilized spruce and jack pine forest units with a prime and old classification. The 1999-2004 Brightsand FMP divided the spruce and jack pine forest units into SP1, SP3, PJ2, and PJ3. The divisions of the spruce and jack pine classes were based on site class and species composition. The IS forest unit was created for the classifications of islands with no FRI description. The NFG (non-free-to-grow) was utilized to describe any area that had been depleted and was currently not yet surveyed for free-to-grow. Generally the area was too young to survey. The M11 (moose leave blocks) forest unit was utilized for the classification of blocks within the caribou mosaic. The design of the forest unit was to display stands located in the area which had a lower operability limit.

The forest units created for the Brightsand (1999-2004) Forest Management Plan created a separation in the poplar forest units and the introduction of two forest units. The poplar was separated into PO2 and PO3, which were based primarily on site class. The presence of poplar with a site class of two or greater fell within PO2 and poplar with site class three or lower fell within PO3. The creation of the other conifer and red pine was performed to allow for the classification of red pine and other conifer stands on the landbase. The balsam fir and white birch forest units from the Brightsand TMP (1994-1999) were changed to BF and BW respectively. The forest unit name, forest type, main working group species, site type, silvicultural system, FRI parameters and criteria for each forest unit for the Brightsand FMP 1999-2004 can be found in Table 2c. The connection between forest units from the current English River FMP and past FMP's and TMP's can be found in Table 2f.

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 Table 2c - Description of Forest Units (FRP 8)
 Brightsand Forest
 Plan Term April 1, 1999 To March 31, 2004

Forest Unit		Forest Type	Main Working Group	Site Type(s)	Silvicultural System	FRI Parameters & Criteria	Additional Information
Code	Name						
SP1	Spruce upland	Conifer	Black Spruce	ES20 Spruce - Pine / Feathermoss ES22 Spruce - Pine / Lignum / Feathermoss ES26 Spruce - Pine / Feathermoss ES31 Spruce - Pine / Feathermoss	Clearcut	wg=sh,ew and site=X,1,2	Site class X,1,2 were aggregated due to the small amount of X and 2 and the similarity in stand development. White Spruce is also included due to the small amount of white spruce working group present and the similarity in stand
SP3	Spruce lowland and shallow soils	Conifer	Black Spruce	ES12 Blk Spruce-Jack Pine Very Shallow (P) only ES34 Tired Bog: Black Spruce/ Sphagnum ES35 Poor Swamp: Black Spruce ES36 Intermediate Swamp: Black Spruce ES37 Rich Swamp: Cedar (Other Conifer)	Clearcut	wg=sh,ew and site=3,4	Site class 4 is included for tracking purposes and is not used to develop model inputs
PJ2	Pj productive	Conifer	Jack Pine	ES13 Jack Pine - Conifer ES14 Pine - Spruce Mixedwood ES25 Pine - Spruce / Feathermoss	Clearcut	wg=pj and site=X,1,2	Site class X,1,2 were aggregated due to the small amount of X and 1 and the similarity in stand development.
PJ3	Pj shallow soils	Conifer	Jack Pine	ES12 Blk Spruce-Jack Pine Very Shallow (P) only	Clearcut	wg=pj and site=3,4	Site class 4 is included for tracking purposes and is not used to develop model inputs
BF	Bf all sites	Conifer	Balsam Fir	ES21 Fir - Spruce Mixedwood ES27 Fir - Spruce Mixedwood ES32 Fir - Spruce Mixedwood	Clearcut	wg=b	
PO2	Po productive	Intolerant Hardwood	Poplar	ES16 Hardwood - Fir - Sp Mixedwood (Po only) ES19 Hardwood - Fir - Sp Mixedwood (Po only) ES26 Hardwood - Fir - Spruce Mixedwood ES29 Hardwood - Fir - Spruce Mixedwood	Clearcut	wg=po and site=X,1,2	Site class X,1,2 were aggregated due to the small amount of X and 1 and the similarity in stand development
PO3	Po moist and shallow soils	Intolerant Hardwood	Poplar	ES23 Hardwood - Fir - Spruce Mixedwood ES33 Hardwood - Fir - Spruce Mixedwood	Clearcut	wg=po and site=3,4	Site class 4 is included for tracking purposes and is not used to develop model inputs
BW	Bw all sites	Intolerant Hardwood	White Birch	ES16 Hardwood - Fir - Sp Mixedwood (Po only) ES19 Hardwood - Fir - Sp Mixedwood (Po only)	Clearcut	wg=bw	
PR	Pr all sites	Conifer	Red Pine	ES11 Red Pine - White Pine ES15 Red Pine - White Pine ES18 Red Pine - White Pine ES24 Red Pine - White Pine	Clearcut with seed trees	wg=pr or (pr=1 and site=3,4 and pr=po) or (pr=2 and site=X,1,2 and	
OC	Other Conifers	Conifer	Other Conifer	ES17 White Cedar ES37 Rich Swamp: Cedar (Other Conifer)	Clearcut	wg=oc or wg=cs or wg=ls	
IS	Islands		Islands	Islands with no F.R.I. Description			
NFG	Non-Free-To-Grow		Depleted Limbo	Any			
M1	Moose Leave Blocks	Conifer		Moose leave blocks in Caribou mosaic in non-A blocks			This forest unit was created, because the stands located within these moose leave blocks have a lower operability limit than the forest units of which they are comprised

Source: Brightsand Forest Management Plan 1999 - 2004, FMP Table 8

English River TMP 1995-2000

The English River 1995-2000 Timber Management Plan utilized a total of seven forest units for the description of the forested area. These were PJO, SPO, POO, BFO, OCO, PW/PR, and BWO. The jack pine (PJO), and spruce forest units (SPO) comprised the majority of area for the English River Forest. The jack pine forest unit included all jack pine stands with a site class of three or better with the majority of the jack pine stands falling within a site class of two or three. The spruce forest unit was comprised of white and black spruce in upland and lowland conditions. The available white spruce for the English River Forest was less than 0.2%, which left very little reason for the separation of the black and white spruce forest units. The poplar, balsam fir, and white birch forest units included all poplar (POO), balsam fir (BFO), and white birch (BWO) stands which occurred on the management unit for all site classes. The white and red pine (PW/PR) forest unit was a combination of all white and red pine stands that existed on the management unit for all possible site classes. The combination of the white and red pine stands was performed due to the relatively low amount of each forest unit. The other conifer (OCO) forest unit was comprised of all cedar and tamarack stands on all site classes in the English River Forest (Cassan, West 1995). The forest unit description for the English River TMP (1995-2015) can be found in Table 2d. The connection between forest units from the current English River FMP and past FMP's and TMP's can be found in Table 2f.

Brightsand TMP 1994-1999

The 1994-1999 Brightsand Timber Management Plan utilized a total of seven forest units for the description of the forest. The forest units utilized were balsam fir (BF), poplar (PO), white birch (BW), spruce (SPO, SPP), and jack pine (PJO, PJP). The Brightsand forest was mainly dominated by the black spruce and jack pine forest units, which comprised 71% of the forested area. The two forest units were further divided into four forest units: these were spruce old, spruce prime (SPO, SPP), and jack pine old, jack pine prime (PJO, PJP). The "old" forest unit descriptor for the jack pine and spruce forest units were stands classified as over-mature; this indicated a lower overall volume yield and was characterized by poorer quality fibre. The "prime" classification for the spruce and jack pine forest units indicated stands that were mature or approaching maturity. The "prime" classification had a greater potential for sawlogs and a higher quality of pulpwood fibre (Dool *et al* 1994). The description of the forest units for the Brightsand TMP can be found in Table 2e. The connection between forest units from the current English River FMP and past FMP's and TMP's can be found in Table 2f.

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Table 2d - Description of Forest Units (TMP 4.13)

English River Forest

Plan Term April 1, 1995 To March 31, 2000

Forest Unit	Rotation or Cutting Cycle	Limiting Age	Regeneration Success (%)	Years to FTG	Roads and Landings	Long Term Losses	NSR Renewal Rate
PJ0	70	120	95	7	5	0	100
SP0	90	140	85	8	5	0	100
PO0	70	110	85	2	5	0	100
BF0	60	90	25	8	5	0	100
OC0	90	120	90	12	5	0	100
PW/PR	100	140	90	10	5	0	100
BW0	100	140	90	7	5	0	100

Source: English River Forest Management Plan 1995 - 2000 TMP Table 4.13

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Table 2e- Description of Forest Units (TMP 4.13)

Brightsand Forest

Plan Term April 1, 1994 To March 31, 1999

Forest Unit	Abbreviation	Rotation or Cutting Cycle	Regeneration Success* (%)	Years to FTG*	Roads and Landings* (%)	NSR Renewal Rate* (%)
Spruce						
Prime	SPP	90	70 **	10	5	25
Old	SPO	90				
Balsam	BF	55	100	5	5	25
Jack Pine						
Prime	PJP	70	100	5	5	25
Old	PJO	70			5	
Poplar	PO	65	100	5	5	25
Birch	BW	65	100	5	5	25

* Only required for OWOSFOP or similar calculations

** 30 percent conversion to Jack Pine working group

Source: Brightsand Forest Management Plan 1994 - 1999, TMP Table 4.13

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Table 2f - Forest Unit Cross-Reference
Brightsand and English River Forest
Plan Term April 1, 1994 To March 31, 2005

2004 English River	2000 English River	1999 Brightsand	1995 English River	1994 Brightsand
SPU	SPU	SP1	SPO	Spruce
SPL	SPL	SP3		
PJ1	PJ	PJ2 & PJ3	PJO	Jack Pine
PO1	PO	PO2 & PO3	POO	Poplar
OC1	OC	OC	OCO	
MH1	MH	PO2, PO3 & BW	POO & BWO	Poplar & White Birch
MC1	MC1	SP1, SP2, PJ2, PJ3,	SPO, PJO, OCO,	Jack Pine, Spruce &
MC2	MC2	PR, OC & BF	BFO & PW/PR	Balsam
BF1	BF	BF	BFO	Balsam
BW1	BW	BW	BWO	White Birch
OH1				
PW1	PW			
PR1	PR	PR	PW/PR	

Source: 1994-1999 Brightsand TMP, 1995-2000 English River TMP,
 1999-2004 Brightsand FMP, 2000-2005 English River FMP,
 2004-2009 English River FMP

Table 2f displays the forest units for the 1994 Brightsand TMP, 1999 Brightsand FMP, 1995 English River TMP, 2000, and 2004 English River FMP. The table displays how the current forest units (2004 English River FMP) are connected to the forest units from previous plans. Of notable mention is the forest unit OH or other hardwood. Prior to the 2004 English River FMP the OH forest unit did not exist. The forest unit OH which occurs on the English River Forest consists of two species (soft maple and black ash). The creation of this forest unit was a result of the new FRI and the attempt to standardize forest units across the licenses Bowater Inc. manages in northwestern Ontario.

Summary of Planned and Actual Harvest Volumes

The following discussion deals with the data found in Table 3 and Figure 2. The values for volume discussed below are annualized figures for all planned and actual harvest for all TMP's and FMP's. The 1994 Brightsand and 1995 English River TMP's reached an overall harvest volume utilization of 72.2 percent. The spruce, balsam fir and poplar actual harvest volumes were significantly below the planned volume by 119,105.8, 48,701.0, and 146,013.6 hectares respectively. The under utilization of the three species was due to the low market demand for the species. The market demand drives the utilization of the species. The total annualized planned harvest volume for white birch during the combined 1994/1995 Brightsand and English River Forests was zero however during the same period 724.0 cubic metres were utilized with the majority of this volume being removed from the English River Forest. The cedar, larch and other hardwood

volumes recorded for the combined 1994/1995 Brightsand and English River Forests were 23.4, 699.8, and 1,904.0 cubic metres while the planned harvest volume for the cedar, larch and other hardwoods was zero. The utilization of white birch, cedar, larch, and other hardwood can be attributed to personal use (fuelwood, personal use building products), road construction and bridging projects. The wood utilized in road construction and bridging was bush scaled and recorded as part of the mill shipment. The jack pine species reached the greatest utilization of 93.0 percent. The market demand on jack pine was greater than that of any other allowing for its higher utilization.

Of particular note in Table 3 are the white pine/red pine species. During combined 1994/1995 Brightsand and English River TMP's the distinction between volumes associated with red and white pine was not performed. During this period the harvest volumes for red and white pine (PW/PR) was 2,768.2 cubic metres on average. The actual harvest volumes as recorded in the Annual Reports (AR) and the Report on Past Forest Operations (RPFO) were separated into the individual species as a result the actual harvest volumes were displayed as red pine (PR) and white pine (PW) harvest volumes.

The actual harvest volumes for the 1999-2004 Brightsand Forest were compiled for the first five years of the Brightsand FMP from a series of OMNR accepted annual reports and GIS based data. The values associated with the actual harvest volumes for the English River Forest (2000-2005) were compiled for the first four years of the FMP from a series of approved annual reports and GIS based data. The 1999 Brightsand and 2000 English River FMP's realized conifer and hardwood harvest volumes were 76.3 and 63.3 percent of the planned harvest volumes. The overall volume utilization for all species was 73.5 percent. The total volume harvested for the combined 1999/2000 Brightsand and English River Forests was 853,656.1 cubic metres of the 1,160,731 planned volume in cubic metres. The utilization of all species within the English River and Brightsand Forests during this period were significantly below the planned harvest volumes spruce (76.7%) balsam fir (49.0%), cedar (4.8%), larch (39.4%), red pine (14.4%), white pine (0.3%), poplar (65.1%) and birch (47.8%) with the exception of the jack pine species which obtained a utilization of 85.1 percent of the planned harvest volume. The spruce, balsam fir, and poplar actual harvest volumes fell short by 98,461.3, 54,610.2, and 76,870.3 metres cubed respectively.

Of notable mention are values associated with volume utilization for the English River and Brightsand Forests for the years ranging from 1994-2004. The utilization attained during the combined 1994/1995 Brightsand and English River TMP's and the combined 1999/2000 Brightsand and English River FMP's was 72.2 and 73.5 percent respectively. Even though a decrease in available volume (planned) occurred between the two periods there was no significant change in volume harvested (actual) as illustrated in Figure 2.

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Table 3 - Summary of Planned & Actual Harvest Volumes
English River Forest and Brightsand Forest
Average Planned and Actual Annual Harvest Volumes

Average Planned Annual Harvest Volumes

Species	Volumes are Annualized		
	Past Plans		Current
	1994-1999 BR 1995-2000 EN	1999-2004 BR 2000-2005 EN	2004-2009
Spruce	448,520	422,815	611,126
Balsam Fir	67,400	107,004	108,954
Jack Pine	516,780	375,208	344,298
Cedar	0	2,603	2,222
Larch	0	5,374	3,553
Red Pine	0	567	0
White Pine	0	2,188	0
White Pine / Red Pine	7,000	0	0
Poplar	222,540	220,182	271,031
Birch	0	24,791	74,740
Other Hardwoods	0	0	0
Total Planned Volumes	1,262,240	1,160,731	1,415,924

Source: Brightsand TMP Table 4.18.1(1994-1999), English River TMP 4.18.1
 (1995-2000), Brightsand FMP (1999-2004) English River FMP 23
 (2000-2005), English River FMP 23 (2004-2009)

Average Actual Annual Harvest Volumes

Species	Volumes are Annualized		
	Past Plans		Current
	1994-1999 BR 1995-2000 EN	1999-2004 BR* 2000-2005 EN**	2004-2009 ***
Spruce	329,414.2	324,353.8	0.0
Balsam Fir	18,699.0	52,393.6	0.0
Jack Pine	480,843.4	319,420.7	0.0
Cedar	23.4	125.8	0.0
Larch	699.8	2,118.7	0.0
Red Pine	1,181.2	81.8	0.0
White Pine	1,587.0	6.3	0.0
White Pine / Red Pine	0.0	0.0	0.0
Poplar	76,526.4	143,311.5	0.0
Birch	724.0	11,843.4	0.0
Other Hardwoods	1,904.0	0.8	0.0
Total Actual Volumes	911,602.4	853,656.1	0.0

* Brightsand 99-04 is represented by 4 years of depletion information supplied from Annual Reports

** English River 00-05 is represented by 4 years of depletion information supplied from Annual Reports

*** Data not available for harvest for the first year of the current English River FMP
 Source: Brightsand AR Table E 1998-1999, 1999-2000, 2000-2001, 2001-2002, 2002-2003, English River AR Table E 1999-2000, 2000-2001, 2001-2002, 2002-2003,

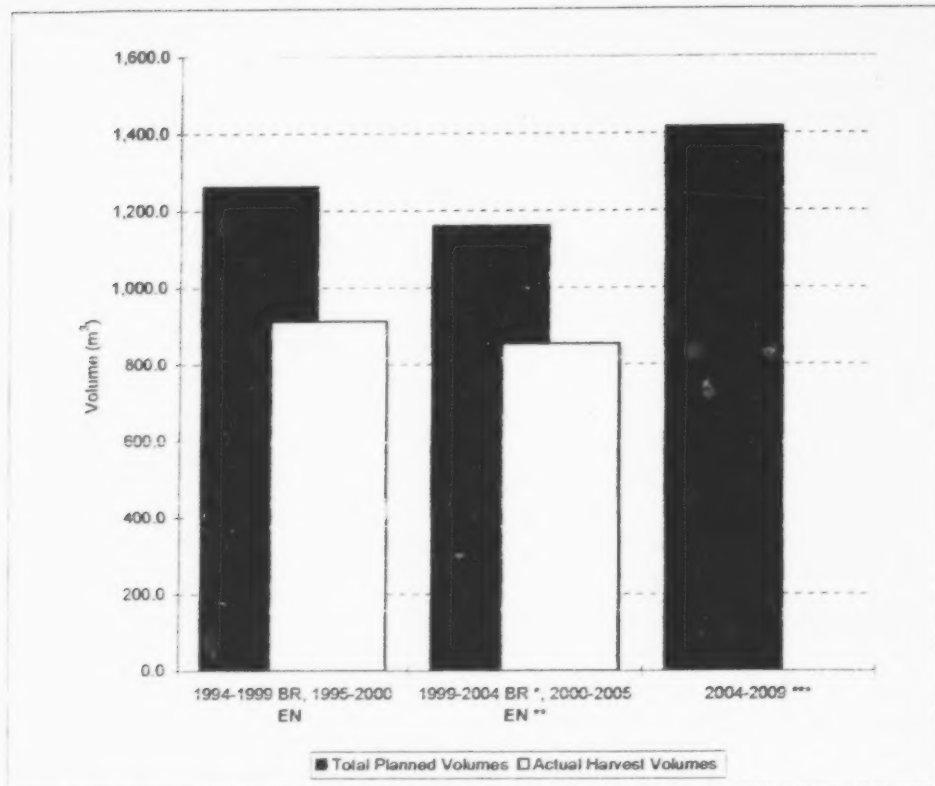


Figure 2. Total planned and actual harvest volume for the English River Forest

* Represents data for Brightsand Forest from the AR's for the first 4 years of the FMP, data not compiled for the last year of plan

** Represents data for English River Forest from the AR's for the first 3 years of the FMP, data not compiled for the last two years of plan

*** Data not available for harvest for the first year of the current English River FMP

Source: Brightsand TMP Table 4.18.1(1994-1999), English River TMP 4.18.1 (1995-2000), Brightsand FMP (1999-2004) English River FMP 23 (2000-2005), English River FMP 23 (2004-2009) Brightsand AR Table E 1998-1999, 1999-2000, 2000-2001, 2001-2002, 2002-2003, English River AR Table E 1999-2000, 2000-2001, 2001-2002, 2002-2003, Brightsand RPFO-4 1994-1999, English River RPFO-4 1995-2000

Summary of Planned and Actual Harvest Depletion Area

The following discussion deals with the data found in Table 4, 4b, and Figure 3. The values for area discussed below are annualized figures for all planned and actual harvest for all TMP's and FMP's. In general, the trends found in planned versus actual harvest depletion are similar to the trends for planned versus actual harvest volume. For the term covered by the combined 1994/1995 Brightsand and English River TMP's the actual harvest depletion was 6,382.5 hectares per year. The depleted area for the term was 73.9 percent of the 8,639.6 hectares planned. The term covered by the combined

1999/2000 Brightsand and English River FMP's actual harvest depletion was 6,564.8 hectares or 85.5 percent of the 7,675.0 hectares planned. The general trend displayed between the combined 1994/1995 Brightsand and English River TMP's and the combined 1999/2000 Brightsand and English River FMP's is a slight increase in actual depletion area while the maximum allowable depletion is decreasing. The 2004-2009 English River Forest planned depletion area however does not follow the trend displayed in maximum allowable depletion. The total planned harvest for the 2004 English River Forest is 7,770.8 hectares, which is greater than the planned harvest for the combined 1999/2000 Brightsand and English River FMP's.

The following discussion deals with combined totals for the jack pine, spruce, and polar forest units. The Jack Pine forest unit was created from a combination of the jack pine, jack pine 2, jack pine 3, PJO, and PJP. The creation of the spruce forest unit was performed through the addition of the spruce 1, spruce 3, spruce lowland, spruce upland, SPO, and SPP forest units. The forest units utilized in the creation of the poplar forest unit were poplar, poplar 1, and poplar 2. The forest units white pine, red pine, white/red pine, balsam fir, mixed conifer 1, mixed conifer 2, mixed hardwood, other conifer, white birch, and mitigation area will be discussed through the use of values directly from Table 4.

The combined spruce forest unit displayed a gradual decline in planned harvest area, while the overall harvested area maintained a steady level. The overall utilization of spruce for the combined 1994/1995 Brightsand and English River TMP's was 60.5 percent while the combined 1999/2000 Brightsand and English River FMP's utilization was 88.3 percent. The increasing utilization was due to a reduction in planned area while the actual harvest area remained steady. The planned harvest area for the combined jack pine forest unit was on the decline however the utilization of this species maintained a constant level. The planned and actual areas of harvest for the combined 1994/1995 Brightsand and English River TMP's were 3,479.0 and 3,297.8 hectares. The planned and actual harvest areas for the combined 1999/2000 Brightsand and English River FMP's were 1,701.5 and 1,733.9 hectares. The planned harvest area for the 2004 English River FMP was 935.7 hectares. The jack pine forest unit displayed a decline in the area of planned and actual harvest.

The balsam fir forest unit displays a decline in the planned harvest area from 531.8 hectares in the combined 1994/1995 TMP's to 426.6 hectares in the combined 1999/2000 FMP's to 6.6 hectares in the 2004 English River FMP. The overall area of harvest for the combined 1994/1995 TMP's was 174.9 hectares while the area of harvest for the combined 1999/2000 FMP's was 314.3 hectares. The utilization of the species was 32.9 percent in the combined 1994/1995 Brightsand and English River TMP's and 73.7 hectares in the combined 1999/2000 Brightsand and English River FMP's. The decline in the planned harvest area was due to spruce budworm infestations and the loss of area associated with this forest unit. The increased harvest of the species however was due to the market demands and the relative use of this species in pulp and paper and dimensional lumber industries.

The planned area of the mixed conifer one (MC1), mixed conifer two (MC2), and mixed hardwood one (MH1) forest units displayed an increase in area from 1,126.1, 581.0 and 421.9 hectares in the combined 1999/2000 Brightsand and English River FMP's to 3,932.5, 597.4 and 683.5 hectares in the 2004 FMP. The figures for planned and actual area in the combined 1994/1995 Brightsand and English River TMP's was zero due to the lack of the three forest units during those plans. The creation of the three forest units was done during the combined 1999/2000 Brightsand and English River FMP's. The utilization of the three species during the combined 1999/2000 FMP's was 80.3, 90.6 and 104.2 percent. The general trend that exists for planned harvest area for the MC1 forest unit is a significant increase in area; while the MC2 and MH1 planned harvest areas are maintaining a consistent level. The creation of these three forest units was a function of changes that have occurred in the classification of forest stands. The increase in planned area of harvest for the MC1 forest unit is a function of SFMM targets.

The poplar and white birch forest units both display significant changes in planned harvest area between the combined 1994/1995 Brightsand and English River TMP's and the 2004 English River FMP. The poplar forest units planned harvest area is on the decline from 1,077.6 in the combined 1994/1995 Brightsand and English River TMP's to 642.0 in the combined 1999/2000 Brightsand and English River FMP's to 519.2 hectares in the 2004 English River FMP. The white birch planned harvest area has declined from 232.8 hectares during the combined 1994/1995 TMP's to 122.8 hectares during the combined 1999/2000 FMP's to 42.2 hectares in the 2004 FMP. The actual area of harvest for the two species maintained a fairly consistent level, which resulted in an increased utilization of the two forest units. The utilization of poplar went from 72.8 percent to 96.4 percent while the utilization of white birch went from 55.6 percent to 92.5 percent when the combined 1994/1995 Brightsand and English River TMP's are compared to the combined 1999/2000 Brightsand and English River FMP's. The decline in the planned harvest area was due past under utilization of these poplar and white birch forest units.

There are instances in the combined 1999/2000 Brightsand and English River FMP's where actual depletion exceeds planned depletion. The mitigation areas (MI1) account for this overage. The MI1 blocks were created for the 1999-2004 Brightsand FMP as moose leave blocks. The moose leave blocks were to be cut over a period of five to ten years from the start of the 1999-2004 Brightsand FMP. The harvesting of these blocks was recommended by OMNR biologists due to their negative affects on the caribou habitat. The allocation for the harvest of the moose leave blocks was classified as the MI1 forest unit. The area recorded following the harvest of the moose leave blocks was broken down into the specific forest units based on the forest units harvested. The classification of the harvested areas into the specific forest units generated a discrepancy in the actual versus planned harvest area.

The general trend illustrated in Figure 3 was a significant reduction in total planned harvest area between the combined 1994/1995 Brightsand and English River TMP's and the combined 1999/2000 Brightsand and English River FMP's. However as illustrated in Figure 3, the AHA between the two periods displays no significant change

in area. The planned harvest areas for the combined 1999/2000 Brightsand and English River FMP's and the 2004 English River FMP also display no significant change.

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**Table 4 - Summary of Planned & Actual Depletion Area
English River Forest and Brightsand Forest
Past and Current Plans**

Plan Term	Planned Annual Harvest Area			Actual Depletion Area		
	Area in hectares (Area is Annualized)			Area in hectares (Area is Annualized)		
	Past Plans		Current	Past Plans		Current
	1994-1999 BR 1995-2000 EN	1999-2004 BR 2000-2005 EN	2004-2009	1994-1999 BR 1995-2000 EN	1999-2004 BR* 2000- 2005 EN**	2004-2009 ***
Forest Unit	Planned	Planned	Planned	Harvest	Harvest	Harvest
Balsam Fir	531.8	426.6	6.6	174.9	314.3	
Jack Pine	2,233.8	886.7	935.7	2,221.9	859.5	
Jack Pine 2	0.0	564.7	0.0	0.0	626.9	
Jack Pine 3	0.0	250.0	0.0	0.0	247.5	
Spruce 1	0.0	984.1	0.0	0.0	976.8	
Spruce 3	0.0	78.9	0.0	0.0	80.7	
Birch	232.8	122.8	42.2	129.5	113.6	
Poplar	1,077.6	399.5	519.2	784.5	366.2	
Poplar 2	0.0	144.1	0.0	0.0	136.7	
Poplar 3	0.0	98.4	0.0	0.0	115.9	
Mixed Conifer 1	0.0	1,126.1	3,932.5	0.0	904.2	
Mixed Conifer 2	0.0	581.0	597.4	0.0	526.6	
Mixed Hardwood 1	0.0	421.9	683.5	0.0	439.8	
Other Conifer	0.2	35.3	38.0	0.6	5.8	
Spruce Lowland	0.0	605.8	346.3	0.0	494.1	
Spruce Upland	0.0	479.9	669.4	0.0	345.4	
Red Pine	0.0	2.5	0.0	0.0	0.0	
White Pine	0.0	19.8	0.0	0.0	10.9	
PJO	57.0	0.0	0.0	46.6	0.0	
PJP	1,188.2	0.0	0.0	1,029.2	0.0	
SPO	2,709.2	0.0	0.0	1,459.4	0.0	
SPP	575.0	0.0	0.0	528.0	0.0	
PWR	34.0	0.0	0.0	7.9	0.0	
Mitigation area	0.0	446.9	0.0	0.0	0.0	
Total Area:	8,639.6	7,675.0	7,770.8	6,382.5	6,564.8	0.0

* Brightsand 99-04 is represented by 4 years of depletion information supplied from Annual Reports

** English River 00-05 is represented by 4 years of depletion information supplied from Annual Reports

*** Data not available for harvest for the first year of the current English River FMP

Source: Brightsand TMP 4.15 (1994-1999), FMP 18 (1999-2004), RPFO 2 (1994-1999) AR Table A (1999-2000, 2000-2001, 2001-2002, 2002-2003), English River TMP 4.15, FMP 18 (2000-2005, 2004-2009), RPFO 2 (1995-2000), AR Table A (2000-2001, 2001-2002, 2002-2003, 2003-2004)

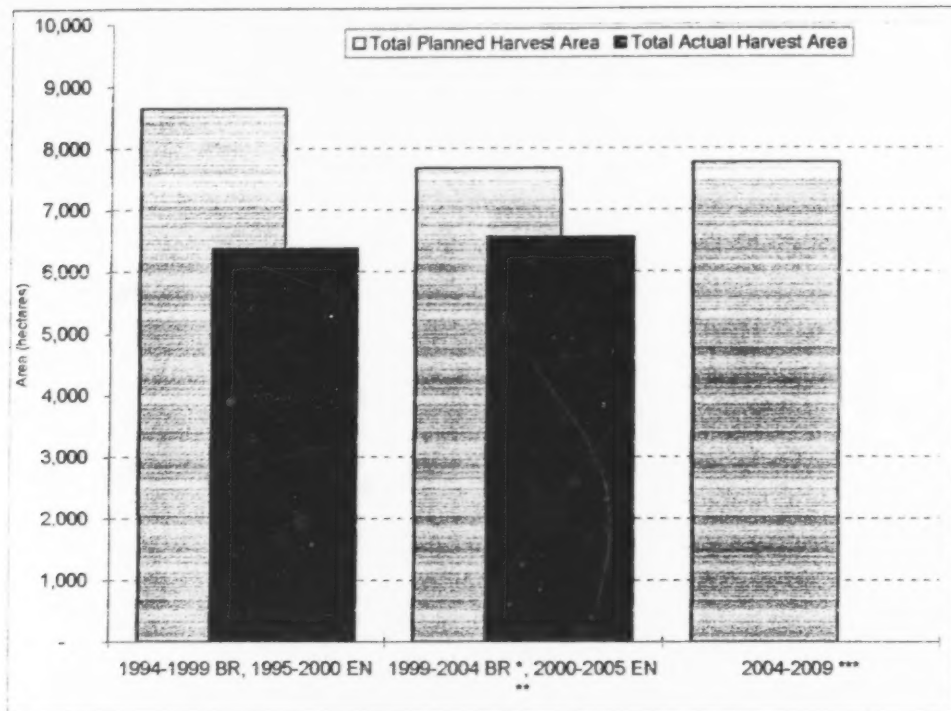


Figure 3. Total planned and actual harvest area for the English River Forest

* Represents data for Brightsand Forest from the AR's for the first 4 years of the FMP, data not compiled for the last year of plan

** Represents data for English River Forest from the AR's for the first 4 years of the FMP, data not compiled for the last year of plan

*** Data not available for harvest for the first year of the current English River FMP

Source: Brightsand TMP 4.15 (1994-1999), FMP 18 (1999-2004), RPFO 2 (1994-1999) AR Table A (1999-2000, 2000-2001, 2001-2002, 2002-2003), English River TMP 4.15, FMP 18 (2000-2005, 2004-2009), RPFO 2 (1995-2000), AR Table A (2000-2001, 2001-2002, 2002-2003, 2003-2004)

Summary of Managed Productive Forest by Forest Unit

English River FMP 2004 to 2009

Table 5a presents the summary of managed Crown production forest area by forest unit and age class for the English River FMP 2004-2009. The data presented in Table 5a is a reproduction of the 2004-2009 English River FMP Table 9. The total production forest area is 780,912.9 hectares. The spruce (SPU, SPL) and jack pine (PJ1) forest units represent 52.4 percent of the available production forest area. The mixed hardwood (MH1), and mixed conifer (MC1, MC2) forest units represent another 34.7 percent of the total available production forest area. The poplar (PO1), balsam fir (BF1), and white birch (BW1) forest units represent a total of 3.5 percent while the other hardwood (OH1), white pine (PW), and red pine (PR) represent less than one percent of the total available production forest area.

English River FMP 2000 to 2005

The summary of managed Crown production forest area by forest unit and age class is provided in Table 5b. The table was compiled from FMP Table 9 available in the 2000-2005 English River FMP. The total production forest area for the English River FMP 2000-2005 was 462,521.6 hectares. The total production forest area represents all available and unavailable production forest area. The spruce (SPL, SPU), and jack pine (PJ) forest units represent 56.3 percent of the available production forest. The mixed conifer (MC1, MC2) forest units represent a total of 30.7 percent of the available production forest. 12.2 percent of the available production forest is represented by the poplar (PO), white birch (BW), mixed hardwood (MH), and balsam fir (BF) forest units. The remaining area which consisted of less than one percent of the available production forest was represented by the other conifer (OC), red pine (PR), and white pine (PW) forest units.

Brightsand FMP 1999 to 2004

The summary of managed Crown productive forest by forest unit is displayed in Table 5c for the 1999-2004 Brightsand FMP. Table 5c did not display area associated with unavailable production forest. This occurred due to the creation of the reserve areas for the FMP. The 1999 Brightsand FMP calculated reserve areas through the use of SFMM (Strategic Forest Management Model) as a percentage of the total production forest. As a result the available landbase area figure (FMP Table 12, 13) does not match the values associated with FMP Table 9 (Brightsand FMP 1999-2004). The spruce (SP1, SP3), and jack pine (PJ2, PJ3) forest units displayed in Table 5c comprise 84.4 percent of the total available production landbase. The balsam fir (BF), poplar (PO2, PO3), and white birch (BW) forest units comprised another 14.1 percent of the available production landbase. The forest unit's red pine (PR), other conifer (OC), and not-free-to-grow (NFG) represent the other 1.5 percent of the available production forest. Of notable mention are the forest units IS and NFC. The IS forest unit represented areas associated with islands. The islands were not included in the inventory. The NFG (non-free-to-grow) forest units were areas that were not free-to-grow. The NFG areas were areas that had been depleted or areas that had not obtained a FTG (free-to-grow) classification due to a lack of minimum age, height or stocking.

English River TMP 1995 to 2000

Table 5d displays the summary of Crown production forest area by forest unit and age class for the 1995-2000 English River TMP. The jack pine (PJO) and spruce (SPO) working groups in the English River Forest comprised 82.2 percent of the total forested landbase or 37.2 and 45.0 percent respectively. The poplar (POO), balsam fir (BFO), and white birch (BWO) working group species comprised 17.1 percent of the forested area. The remaining area of the forest (less than one percent) was comprised of the other conifer (OCO), red and white pine (PW/PR) working groups. Of notable mention was the age class B&S (Barren and Scattered). The areas associated with B&S age class were

areas that had been depleted and were not re-introduced into the inventory in age class 1 to 10.

Brightsand TMP 1994 to 1999

The following discussion is directed to the data presented in Table 5e. Table 5e displays the summary of Crown production forest area by forest unit and age class for the 1994-1999 Brightsand TMP. The spruce and jack pine forest units comprised 52.7 and 34.7 percent respectively. The combined total represented by the spruce and jack pine forests units was 87.4 percent of the total production forest. The balsam fir, poplar, and white birch comprised the other 12.6 percent of the production forest or 2.8, 6.5, and 3.3 percent respectively. Of notable mention are the NSR (Not Satisfactorily Regenerated) and FTG (free-to-grow) age classes displayed in the spruce, jack pine, balsam fir, poplar, and white birch working groups. The NSR age class represents areas that had not been regenerated to the point of free-to-grow.

Figure 4 displays the age class distributions of the available production forest for the planning periods under consideration in this report. These areas have been grouped to allow for easier comparison since the definition and categorization of these areas has changed overtime. The following discussion deals specifically with the comparison between the combined 1994/1995 Brightsand and English River TMP's, combined 1999/2000 Brightsand and English River FMP's and the 2004 English River FMP's age class distributions. The age classes "No Age Class & 1-20" and "121-221+" displayed in Figure 4 are of notable mention. The age class "No Age Class & 1-20" was created from the combination of two age classes: these being "No Age Class" and "1-20". The age class "121-221+" was created from the combination of the values associated with the "121-140", "141-160", "161-180", "181-200", "201-220" and "221+" age classes. The creation of these two age classes was performed for the comparison purposes in Figure 4.

The three age class distributions presented in Figure 4 display only minor variations in the distribution of area associated with age classes. The age classes associated with the 2004 English River FMP display noticeable differences in area associated with the "No Age Class & 1-20", "21-40" and "121-221+" when compared to previous combined FMP's and combined TMP's. The reduction in area associated with the "No Age Class & 1-20" and the increase in area associated with the "21-40" age classes was due to a greater movement of area from the age class "No Age Class & 1-20" to the "21-40" than the amount of area which was depleted (Natural & Harvest). The age class "121-221+" displays a reduction in area associated with the 2004 English River FMP when compared to previous combined FMP's and combined TMP's. The reduced area was due to the movement of area from these age classes into the "No Age Class & 1-20" age class. The movement of this area is a result of natural and harvest depletions created on the landbase during the combined 1999/2000 Brightsand and English River FMP's and the reclassification of ages due to the implementation of the new inventory. Generally there were no major changes between the age class distributions.

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Table 5a - Summary of Crown Production Forest Area by Forest Unit and Age Class (FMP 9)

English River Forest

Plan Term: April 1, 2004 to March 31, 2009

Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m3)	Unavailable		Stage of Management *	Available	
				(ha)	(m3)		(ha)	(m3)
SPU	1-20	456.9		3431.3	476.0		52996.3	6203.0
	21-40			680.3	9272.0		8158.7	107609.0
	41-60	12.8	1000.0	399.0	29297.0		4728.9	335299.0
	61-80	303.0	37180.0	2053.0	247593.0		21053.1	2542910.0
	81-100	126.3	19449.0	3502.6	526796.0		33178.4	4992836.0
	101-120	141.1	22887.0	1784.1	291648.0		15218.0	2487105.0
	121-140	3.5	490.0	320.7	46755.0		2740.6	398325.0
	141-160			57.5	7280.0		665.6	84014.0
	161-180			7.4	790.0		112.8	12157.0
	181-200			7.5	697.0		74.3	6964.0
	201-220							
	221+							
Forest Unit Subtotal		1 043.6	81 006.0	12 243.4	1 160 604.0		138 925.9	10 973 422.0
SPL	1-20	5.4		1098.9			9923.5	
	21-40			585.8	358.0		5030.2	3069.0
	41-60	204.0	4002.0	614.3	8254.0		4407.2	62670.0
	61-80	997.2	42445.0	1511.9	62274.0		12446.5	515047.0
	81-100	2420.2	163935.0	2086.3	158777.0		17151.3	1299658.0
	101-120	2749.7	306339.0	1739.0	191572.0		12979.4	1432162.0
	121-140	374.3	43748.0	460.4	53351.0		4063.6	472949.0
	141-160	33.7	3638.0	198.7	20707.0		1341.7	139899.0
	161-180	48.9	4542.0	4.8	463.0		103.9	9901.0
	181-200			3.6	320.0		19.2	1727.0
	201-220							
	221+							
Forest Unit Subtotal		6 633.4	558 648.0	6 503.7	486 076.0		67 466.5	5 637 262.0
PJ1	1-20	35.6		3030.6	753.0		77763.6	18064.0
	21-40	540.7	8110.0	6429.6	95452.0		79779.9	1172757.0
	41-60	20.5	1754.0	332.9	25930.0		5296.0	373621.0
	61-80	101.1	17753.0	1801.1	309926.0		18259.2	3136420.0
	81-100	63.5	12329.0	2260.7	445281.0		19897.8	3919027.0
	101-120	20.6	3651.0	222.1	39302.0		1873.8	335554.0
	121-140			57.6	5859.0		280.9	29250.0
	141-160							
	161-180							
	181-200							
	201-220							
	221+							
Forest Unit Subtotal		782.0	43 597.0	14 134.6	922 503.0		203 151.4	8 984 693.0
PC1	1-20	113.9	941.0	513.7	1476.0		13977.1	21772.0
	21-40			50.7	3058.0		1440.8	82939.0
	41-60	6.7	1373.0	44.9	8358.0		602.6	109258.0
	61-80	86.3	18077.0	312.0	69797.0		4085.9	915644.0
	81-100	50.7	9376.0	164.6	29532.0		2112.3	394554.0
	101-120			9.5	1177.0		72.4	8523.0
	121-140							
	141-160							
	161-180							
	181-200							
	201-220							
	221+							
Forest Unit Subtotal		257.6	30 767.0	1 095.4	113 398.0		22 291.1	1 532 690.0

Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m3)	Unavailable		Stage of Management	Available	
				(ha)	(m3)		(ha)	(m3)
OC1	1-20			97.1	7.0		584.7	83.0
	21-40			5.3	50.0		35.3	295.0
	41-60	24.4	757.0	43.6	1144.0		321.5	6238.0
	61-80	36.9	1876.0	128.0	6592.0		738.8	38195.0
	81-100	123.9	9463.0	187.5	14073.0		1030.9	76554.0
	101-120	247.5	26158.0	152.4	16020.0		944.5	99260.0
	121-140	131.3	12778.0	67.0	6743.0		851.7	84820.0
	141-160			36.0	2626.0		232.0	16969.0
	161-180						17.1	1007.0
	181-200			4.9	254.0		22.1	1151.0
	201-220							
221+								
Forest Unit Subtotal		564.0	51032.0	722.0	47509.0		4778.6	326572.0
MH1	1-20	219.6	1756.0	153.9	1423.0		3465.1	29259.0
	21-40	157.6	7110.0	1128.0	50659.0		12028.3	607013.0
	41-60	187.5	26824.0	1076.2	154252.0		11234.7	1536423.0
	61-80	806.0	157584.0	2856.1	557059.0		22786.5	4438147.0
	81-100	323.8	58464.0	1714.6	314827.0		15013.3	2753180.0
	101-120	16.7	2352.0	73.7	10426.0		1161.6	160757.0
	121-140	12.8	1304.0	10.0	1022.0		143.6	14716.0
	141-160	6.5	559.0					
	161-180							
	181-200							
	201-220							
221+								
Forest Unit Subtotal		1730.5	256963.0	7012.5	1089668.0		65833.1	9539495.0
MC1	1-20	123.5	666.0	435.4	2571.0		8807.3	48449.0
	21-40	45.8	1144.0	2385.3	65587.0		24683.8	675066.0
	41-60	149.6	15361.0	1073.8	99692.0		9494.7	647245.0
	61-80	716.7	123801.0	3842.3	646062.0		30973.8	5210176.0
	81-100	684.1	133868.0	5563.5	1092343.0		44759.7	8792606.0
	101-120	361.1	64231.0	2036.3	356794.0		15263.6	2655682.0
	121-140	73.6	7515.0	428.0	48711.0		3289.1	374007.0
	141-160	7.6	621.0	84.0	6960.0		553.2	46076.0
	161-180			0.9	74.0		3.3	271.0
	181-200			8.6	717.0		113.1	9388.0
	201-220			1.6	130.0		6.1	504.0
221+								
Forest Unit Subtotal		2164.2	347207.0	15859.7	2315647.0		137947.8	18659470.0
MC2	1-20	65.7	854.0	263.2	3852.0		5553.3	66462.0
	21-40	192.5	10221.0	1806.0	90826.0		22379.4	1172476.0
	41-60	17.4	3176.0	447.8	68482.0		5079.7	733794.0
	61-80	323.4	68331.0	1290.7	273689.0		11118.6	2358554.0
	81-100	265.6	50365.0	1949.4	384012.0		15970.5	3147592.0
	101-120	79.6	11874.0	743.4	103514.0		5807.5	791780.0
	121-140			136.9	9747.0		910.0	65863.0
	141-160			18.4	1272.0		253.6	17505.0
	161-180							
	181-200							
	201-220							
221+								
Forest Unit Subtotal		944.1	144821.0	6655.6	935396.0		67072.6	8354026.0
BF1	1-20			31.8	17.0		430.5	232.0
	21-40			4.9	226.0		6.1	284.0
	41-60			2.9	328.0		20.5	2305.0
	61-80			2.7	424.0		101.2	15787.0
	81-100			9.6	1447.0		24.1	3606.0
	101-120			0.2	16.0		3.7	382.0
	121-140							
	141-160							
Forest Unit Subtotal				52.3	2456.0		586.1	22596.0

		Protection Forest		Production Forest				
Forest Unit	Age Class	(ha)	(m3)	Unavailable		Stage of Management	Available	
				(ha)	(m3)		(ha)	(m3)
BW1	1-20	16.3		108.0	157.0		3100.8	1882.0
	21-40							
	41-60	8.7	348.0	59.4	1787.0		343.8	9260.0
	61-80	33.1	3216.0	47.5	3650.0		261.0	24518.0
	81-100	73.1	9796.0	83.9	11276.0		724.6	96997.0
	101-120	8.4	850.0	8.7	848.0		242.7	25105.0
	121-140						34.3	1705.0
	141-160							
	161-180							
	181-200							
	201-220							
	221+							
Forest Unit Subtotal		139.6	14,211.0	307.5	17,716.0		4,727.2	156,467.0
OH1	1-20						2.1	
	21-40							
	41-60			2.3			47.8	
	61-80			6.7			28.5	
	81-100						6.0	
	101-120	10.1						
	121-140							
	141-160							
	161-180							
	181-200							
	201-220							
	221+							
Forest Unit Subtotal		10.1		9.0			86.4	0.0
PW	1-20			0.1		FR	45.0	49.0
	21-40							
	41-60							
	61-80	12.5	1589.0	0.9	111.0		4.7	597.0
	81-100	10.6	1514.0	3.6	549.0		26.3	3768.0
	101-120			1.8	269.0	FR	22.1	3244.0
	121-140			16.0	2427.0	FR	38.4	5789.0
	141-160							
	161-180			21.6	4093.0	FR	229.9	43620.0
	181-200			4.3	932.0		35.0	7515.0
	201-220			1.2	243.0	FR	85.1	18241.0
	221+							
Forest Unit Subtotal		23.1	3,103.0	49.7	6,634.0		486.5	63,023.0
PR	1-20			9.1			789.3	5.0
	21-40			0.1	4.0		63.4	1385.0
	41-60			0.9	53.0		33.7	2930.0
	61-80			1.4	166.0		7.2	855.0
	81-100			0.4	78.0		65.0	11564.0
	101-120			2.5	474.0		55.4	10731.0
	121-140			3.9	768.0		20.8	4078.0
	141-160							
	161-180							
	181-200							
	201-220			3.2	536.0	FR	36.1	6105.0
	221+							
Forest Unit Subtotal				21.4	2,081.0		1,071.0	37,653.0
Total		14,492.2	1,590,346.0	66,467.2	7,115,652.0		714,444.2	62,610,369.0

Source: English River Forest FMP Table 9

* The "FR" stage of management is an alternate method for the management of red and white pine stands. The "FR" stage of management is a modified seed/selection cut silvicultural system for the natural regeneration of red and white pine stands on the English River Forest.

2005 Independent Forest Audit

Table 5b - Summary of Crown Production Forest Area by Forest Unit and Age Class (FMP 9)

English River Forest

Plan Term: April 1, 2000 to March 31, 2005

Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m3)	Unavailable		Stage of Management	Available	
				(ha)	(m3)		(ha)	(m3)
OC	1-20			5.6			4.6	
	21-40			0.7	18.2		89.2	
	41-60			0.9	36.9		13.6	358.8
	61-80			32.2	2,563.9		136.7	7,166.2
	81-100			35.5	3,542.6		218.3	16,470.6
	101-120	3.6	395.2	111.2	11,582.5		612.7	61,079.6
	121-140			16.5	1,369.5		876.6	90,338.0
	141-160						372.4	30,940.3
	161-180						5.8	377.0
	181-200						2.9	145.0
	201-220							
	221+							
Forest Unit Subtotal		3.6	395.2	202.6	19,133.6		2,333.0	206,675.5
SPL	1-20			55.4			1,894.6	
	21-40			293.6			5,735.3	
	41-60			393.1	136.5		4,737.5	2,020.6
	61-80	163.4	7,654.6	172.4	2,508.4		1,720.4	24,268.0
	81-100	367.3	26,952.9	786.2	32,833.0		7,311.2	297,480.8
	101-120	457.7	43,662.6	546.9	36,634.2		6,529.0	446,773.5
	121-140	690.7	70,729.0	520.2	48,660.3		4,141.9	389,853.9
	141-160	984.9	98,743.5	371.5	38,118.2		3,659.0	375,357.4
	161-180	323.3	27,219.5	389.3	38,206.5		4,332.1	429,542.4
	181-200			66.5	5,458.5		974.9	80,866.5
	201-220			0.6	39.6		34.3	2,263.8
	221+			3.6	212.4		12.6	743.4
Forest Unit Subtotal		2,967.3	274,962.1	3,601.5	202,807.6		41,062.6	2,046,172.5
Pj	1-20			94.3			3,992.0	
	21-40			5,845.0			77,473.4	3.6
	41-60	12.9	296.7	1,404.1	45,547.7		23,764.2	779,850.1
	61-80			136.4	20,135.4		963.6	138,327.6
	81-100	79.0	14,694.0	1,351.8	243,024.8		15,301.2	2,751,633.2
	101-120	606.4	118,205.8	2,570.1	499,621.4		16,103.3	3,129,386.0
	121-140	44.8	8,288.0	497.6	85,710.1		2,734.9	467,128.7
	141-160			148.9	16,860.6		722.3	80,349.7
	161-180			121.9	9,400.5		455.7	34,940.5
	181-200			24.4	2,122.6		256.0	22,448.4
	201-220			0.1	9.3		21.2	1,971.6
	221+							
Forest Unit Subtotal		745.1	141,464.5	12,194.6	922,432.6		141,789.6	7,406,039.6
Po	1-20			15.2			692.3	
	21-40			65.7	505.0		1,695.0	10,017.0
	41-60			98.4	2,829.0		1,404.3	47,971.5
	61-80			2.6	286.0		59.0	9,081.2
	81-100	43.6	11,161.6	174.5	43,436.9		1,206.4	302,461.2
	101-120	472.7	117,405.9	571.5	137,691.0		3,789.8	907,356.6
	121-140	91.7	16,597.7	254.9	44,566.4		1,667.8	294,471.1
	141-160			114.4	18,710.7		1,412.4	230,545.7
	161-180			4.6	628.0		48.2	6,676.0
	181-200						5.2	1,066.0
	201-220							
	221+							
Forest Unit Subtotal		606.0	145,165.2	1,301.8	246,853.0		11,980.4	1,811,666.3

Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m3)	Unavailable		Stage of Management	Available	
				(ha)	(m3)		(ha)	(m3)
Bw	1-20	18.5	1,572.5	3.2			202.4	
	21-40			34.0	128.8	263.1	774.4	
	41-60			5.0	70.0	93.0	1,739.4	
	61-80			28.0	2,293.0	172.4	13,343.2	
	81-100			96.9	12,238.3	693.5	85,301.5	
	101-120	37.6	3,572.0	213.7	28,276.9	1,083.6	139,842.0	
	121-140			26.5	2,195.9	376.4	35,076.6	
	141-160					4.9	200.9	
	161-180					13.1	235.8	
	181-200							
	201-220							
	221+							
Forest Unit Subtotal		56.1	5,144.5	407.3	45,202.9		2,904.4	276,464.0
Bf	1-20	36.6	4,282.2	31.1			850.8	
	21-40			218.4	39.7	1,654.2	300.3	
	41-60			5.0	60.0	73.6	883.2	
	61-80			1,007.6	82,423.2	6,283.9	511,475.1	
	81-100			542.0	68,352.7	3,247.7	413,664.4	
	101-120			98.7	16,154.7	741.4	121,484.2	
	121-140			73.8	10,067.4	516.6	68,139.8	
	141-160			46.4	4,235.8	252.9	23,208.6	
	161-180			79.6	6,718.9	363.4	30,665.8	
	181-200			2.5	222.5	12.4	1,103.6	
	201-220							
	221+							
Forest Unit Subtotal		36.6	4,282.2	2,105.1	168,274.9		13,996.9	1,170,925.0
SPU	1-20			76.2			2,337.9	
	21-40			732.7		12,917.9	3.2	
	41-60			409.2	6,511.6	5,813.2	91,895.1	
	61-80			279.1	17,749.2	3,412.4	219,983.6	
	81-100			1,037.1	118,007.0	10,511.8	1,211,994.2	
	101-120			1,113.2	162,926.5	11,176.9	1,637,239.6	
	121-140			514.5	86,898.0	3,397.6	575,568.8	
	141-160			353.0	51,699.8	2,646.0	388,104.0	
	161-180			277.6	35,069.6	2,309.3	291,536.5	
	181-200			75.1	8,470.9	519.3	58,577.5	
	201-220			8.2	746.2	10.4	946.4	
	221+							
Forest Unit Subtotal				4,875.9	488,079.0		55,052.9	4,475,849.1
MC1	1-20			106.7			4,305.9	
	21-40			1,324.9	1,528.0	17,982.2	23,064.6	
	41-60			968.6	29,306.8	13,770.9	407,830.5	
	61-80			691.9	71,921.4	7,756.1	806,991.3	
	81-100			1,664.3	259,468.5	14,270.1	2,258,197.3	
	101-120	33.0	6,666.0	1,918.2	392,671.4	13,932.9	2,856,128.8	
	121-140			796.5	151,073.6	4,920.4	934,133.6	
	141-160			605.4	77,815.1	3,046.0	395,300.5	
	161-180			618.5	57,901.5	3,538.1	331,126.3	
	181-200			210.7	19,424.9	1,187.2	109,828.4	
	201-220	15.4	1,232.6	8.1	834.3	54.3	5,592.9	
	221+					15.5	1,720.5	
Forest Unit Subtotal		130.6	22,633.6	8,915.4	1,061,944.5		64,779.6	6,129,914.9

Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m3)	Unavailable		Stage of Management	Available	
				(ha)	(m3)		(ha)	(m3)
MC2	1-20			3.9			539.6	50,572.0
	21-40			1,614.2	3,302.4		20,815.9	312,476.5
	41-60			962.6	20,949.6		14,048.8	93,579.8
	61-80	35.0	7,910.0	49.5	5,630.0		766.2	309,990.0
	81-100	84.8	20,267.2	216.0	46,344.2		1,418.5	843,517.7
	101-120			416.3	97,039.7		3,613.5	284,576.4
	121-140	45.4	6,537.6	277.4	47,744.1		1,671.1	133,713.5
	141-160			168.5	14,615.0		1,539.3	19,355.4
	161-180			47.1	3,651.5		247.2	12,032.4
	181-200			18.7	1,766.8		124.1	
	201-220							
	221+							
Forest Unit Subtotal		165.2	34,714.6	3,774.4	241,043.3		44,784.2	2,059,813.7
MH	1-20			27.6			1,791.4	
	21-40			208.4	298.2		3,128.8	5,589.4
	41-60			223.6	6,813.4		2,764.1	85,917.3
	61-80	136.1	26,125.9	60.9	6,982.3		772.7	85,741.6
	81-100	324.7	68,099.8	629.1	121,099.5		3,750.9	713,716.7
	101-120	119.6	20,946.3	935.3	194,456.2		6,677.1	1,398,046.2
	121-140			220.9	36,560.2		1,919.1	324,447.3
	141-160			168.5	18,270.1		1,449.2	153,812.4
	161-180			51.6	4,403.0		247.1	21,128.9
	181-200							
	201-220							
	221+							
Forest Unit Subtotal		580.4	115,172.0	2,526.1	388,882.9		22,500.4	2,788,399.8
PR	1-20			4.6			34.7	
	21-40			5.4			305.7	
	41-60			0.1	1.4		6.3	61.6
	61-80						12.0	948.0
	81-100						49.2	6,667.6
	101-120			26.1	5,164.8		21.3	4,174.8
	121-140			13.7	2,685.2		21.1	4,131.6
	141-160			3.6	700.0		23.2	4,239.4
	161-180			12.5	2,282.3		5.4	993.6
	180-200					FR	12.7	2,235.2
	201-220							
	221+							
Forest Unit Subtotal				69.0	10,633.7		491.6	25,451.6
PW	1-20			2.7			79.0	
	21-40			0.2			66.4	
	41-60			4.4	4.4	FR	60.2	60.2
	61-80						15.8	916.4
	61-80			0.2	16.0		12.8	1,024.0
	81-100						21.9	2,255.7
	81-100			11.7	1,498.6		77.2	9,551.7
	101-120			3.4	476.0	FR	43.5	6,080.0
	121-140			8.7	1,313.7	FR	22.4	3,392.4
	121-140			3.8	575.2		82.1	12,297.6
	141-160			18.3	2,781.6	FR	68.9	10,472.8
	161-180			22.1	3,057.9	FR	138.1	19,141.5
	181-200			4.2	567.0	FR	83.9	11,299.1
Forest Unit Subtotal				79.7	10,290.4		772.2	76,501.4
Total		5,313.1	743,954.3	40,053.4	3,827,776.4		422,488.2	30,477,073.6

Source: English River Forest FMP Table 9

* The "FR" stage of management is an alternate method for the management of red and white pine stands. The "FR" stage of management is a modified seed/selection cut silvicultural system for the natural regeneration of red and white pine stands on the English River Forest.

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Table 5c - Summary of Crown Production Forest Area by Forest Unit and Age Class (FMP 9)

Brightsand Forest

Plan Term: April 1, 1999 to March 31, 2004

Forest Unit	Age Class	Protection Forest		Production Forest ^a			
		(ha)	(m3)	Unavailable		Stage of Management	Available
				(ha)	(m3)		(ha) (m3)
Sp1	1-20						2,987.1
	21-40						37,145.8
	41-60						7,999.0
	61-80	8.1	226.0				768.6
	81-100	11.1	351.0				7,175.5
	101-120	20.4	118.0				21,459.5
	121-140	16.4	360.0				20,897.9
	141-160						8,839.6
	161-180						15,390.7
	181-200						2,153.3
	201-220						90.0
	221+						16.1
Forest Unit Subtotal		56.0	1,055.0				124,964.1
Sp3	1-20						234.6
	21-40	3.5					1,725.0
	41-60						290.9
	61-80	35.4					187.5
	81-100	318.0					226.3
	101-120	432.1					1,554.3
	121-140	167.7					1,032.2
	141-160	441.0					1,582.5
	161-180	56.8					1,797.2
	181-200	6.4					593.6
	201-220						
	221+						
Forest Unit Subtotal		1,460.9					5,224.1
Pj2	1-20						1,965.5
	21-40	301.4	204.0				46,027.9
	41-60						12,036.2
	61-80						202.5
	81-100						2,987.6
	101-120						19,103.9
	121-140						4,737.0
	141-160						1,308.6
	161-180						787.3
	181-200						39.7
	201-220						
	221+						
Forest Unit Subtotal		301.4	204.0				69,195.2
Pj3	1-20						386.6
	21-40						2,696.9
	41-60						921.4
	61-80	150.2					6.4
	81-100	84.4					2,799.2
	101-120	11.0					8,787.2
	121-140						532.2
	141-160						127.3
	161-180						49.6
	181-200						
	201-220						
	221+						
Forest Unit Subtotal		245.6					16,306.8

Forest Unit	Age Class	Protection Forest		Production Forest*				
		(ha)	(m3)	Unavailable		Stage of Management	Available	
				(ha)	(m3)		(ha)	(m3)
Bf	1-20	8.8	204.0				121.3	
	21-40						2,313.7	
	41-60						600.3	8.0
	61-80						702.0	1,425.0
	81-100						2,131.0	9,780.0
	101-120						1,230.6	6,753.0
	121-140						219.6	1,856.0
	141-160							
	161-180							
	181-200							
	201-220							
	221+							
Forest Unit Subtotal		8.8	204.0				7,318.5	21,822.0
Po2	1-20						123.4	
	21-40						4,822.2	315.0
	41-60						3,607.2	6,034.0
	61-80						69.5	1,245.0
	81-100						210.2	2,156.0
	101-120						1,519.3	17,779.0
	121-140						562.0	5,155.0
	141-160						109.8	986.0
	161-180						39.5	534.0
	181-200							
	201-220							
	221+							
Forest Unit Subtotal							11,083.1	34,204.0
Po3	1-20						447.4	
	21-40						2,263.2	
	41-60						214.5	143.0
	61-80						9.7	232.0
	81-100						865.7	5,946.0
	101-120						6,016.1	44,133.0
	121-140						1,118.4	12,011.0
	141-160						285.6	1,134.0
	161-180						138.1	906.0
	181-200							
	201-220							
	221+							
Forest Unit Subtotal		375.1					11,358.9	64,505.0
Bw	1-20						57.5	
	21-40						1,800.9	
	41-60						474.8	92.0
	61-80						230.0	637.0
	81-100						752.4	3,198.0
	101-120						4,353.3	20,794.0
	121-140						1,682.9	7,834.0
	141-160						690.1	3,453.0
	161-180						163.4	815.0
	181-200							
	201-220							
	221+							
Forest Unit Subtotal		219.4					10,245.3	36,823.0

Forest Unit	Age Class	Protection Forest		Production Forest*				
		(ha)	(m3)	Unavailable		Stage of Management	Available	
				(ha)	(m3)		(ha)	(m3)
Pr	1-20						94.0	
	21-40						23.2	10.0
	41-60							
	61-80							
	81-100							
	101-120							
	121-140							
	141-160							
	161-180							
	181-200							
	201-220							
	221+							
Forest Unit Subtotal							117.2	10.0
Oc	1-20						13.5	
	21-40						10.8	
	41-60						8.1	49.0
	61-80						7.4	348.0
	81-100						9.7	104.0
	101-120						27.0	265.0
	121-140	5.5					36.6	148.0
	141-160	24.4					4.1	115.0
	161-180	21.4						
	181-200							
	201-220							
	221+							
Forest Unit Subtotal		51.3					117.2	1,029.0
NFG	1-20						178.6	
	21-40						3,787.4	
	41-60						140.5	
Forest Unit Subtotal							4,106.5	
IS		836.0						
Forest Unit Subtotal		836.0						
Total		3,554.5	1,463.0				284,037.9	1,427,837.0

* does not include islands without F.R.I. stand typing

Source: Brightsand Forest FMP Table 9

2005 Independent Forest Audit
 Table 5d - Summary of Crown Production Forest Area by Forest
 Unit and Age Class (TMP 4.9)
 English River Forest
 Plan Term: April 1, 1995 to March 31, 2000

Forest Unit	Age Class	Area (Hectares)
PJ0	B&S	0
	1 to 20	85,147
	21 to 40	16,874
	41 to 60	11,841
	61 to 80	26,472
	81 to 100	22,029
	101 to 120	4,046
	121+	2,773
Total PJ0		169,162
SP0	B&S	62,006
	1 to 20	16,505
	21 to 40	15,648
	41 to 60	19,911
	61 to 80	35,626
	81 to 100	22,561
	101 to 120	11,284
	121+	21,301
Total SP0		204,844
PO0	B&S	0
	1 to 20	7,275
	21 to 40	1,793
	41 to 60	607
	61 to 80	5,808
	81 to 100	10,536
	101 to 120	4,767
	121+	2,607
Total PO0		33,393
BF0	B&S	1,367
	1 to 20	0
	21 to 40	2,570
	41 to 60	14,230
	61 to 80	5,919
	81 to 100	1,957
	101 to 120	1,642
	121+	2,960
Total BF0		30,645
OC0	B&S	0
	1 to 20	150
	21 to 40	0
	41 to 60	42
	61 to 80	250
	81 to 100	479
	101 to 120	694
	121+	721
Total OC0		2,336
BW0	B&S	0
	1 to 20	1,206
	21 to 40	224
	41 to 60	1,651
	61 to 80	4,368
	81 to 100	4,134
	101 to 120	888
	121+	1,146
Total BW0		13,617
PW/PR0	B&S	0
	1 to 20	68
	21 to 40	12
	41 to 60	0
	61 to 80	25
	81 to 100	161
	101 to 120	203
	121+	322
Total PW/PR0		791
Total		454,806

Note: All depletions are removed from the appropriate age class and added to B&S in the same working group. Table updated to include Year 1-3 depletions in the 1990-1995 period. Exclusions are not.

2005 Independent Forest Audit
 Table 5e - Summary of Crown Production Forest Area by Forest
 Unit and Age Class (TMP 4.9)
 Brightsand Forest
 Plan Term: April 1, 1994 to March 31, 1999

Working Group	Age Class	Area (Hectares)
Spruce	NSR 2-6	45,406
	FTG-20	3,725
	21 to 40	1,470
	41 to 60	2,106
	61 to 80	12,011
	81 to 100	31,472
	101 to 120	21,067
	121+	42,786
Total Spruce		160,043
Balsam	NSR 2-6	1,347
	FTG-20	0
	21 to 40	683
	41 to 60	1,693
	61 to 80	3,290
	81 to 100	1,240
	101 to 120	193
	121+	77
Total Balsam		8,523
Jack Pine	NSR 2-6	23,775
	FTG-20	28,920
	21 to 40	2,383
	41 to 60	895
	61 to 80	11,984
	81 to 100	29,378
	101 to 120	5,400
	121+	2,605
Total Jack Pine		105,340
Poplar	NSR 2-6	1,445
	FTG-20	5,839
	21 to 40	425
	41 to 60	17
	61 to 80	3,814
	81 to 100	6,301
	101 to 120	1,621
	121+	195
Total Poplar		19,657
White Birch	NSR 2-6	802
	FTG-20	381
	21 to 40	0
	41 to 60	289
	61 to 80	1,721
	81 to 100	4,355
	101 to 120	1,681
	121+	720
Total White Birch		9,949
Total		303,512

Source: Brightsand Forest TMP Table 4.9

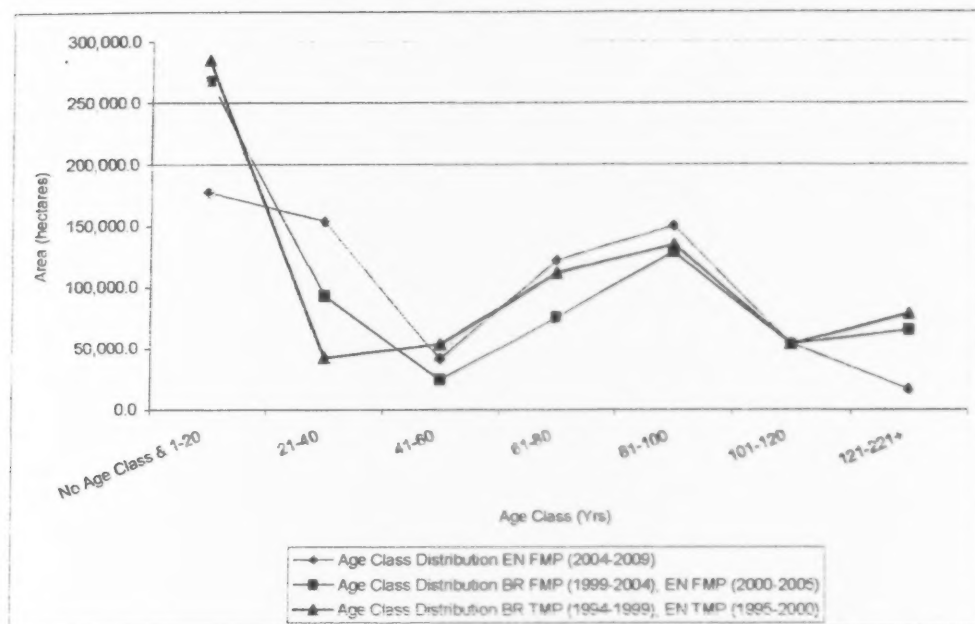


Figure 4. Age class distributions for the English River and Brightsand Forests for the years 1994-2009

Source: 1994 Brightsand Forest TMP Table 4.9, 2000 English River Forest TMP Table 4.9, 1999 Brightsand FMP Table 9, 2000 English River Forest FMP Table 9, 2004 English River FMP Table 9

Summary Report of Renewal, Tending and Protection Operations

Table 6a displays the summary report of renewal, tending and protection operations for the terms discussed in the English River comparison and trends analysis. Table 6b displays the planned and actual renewal percentage for the natural and artificial renewal programs, and Table 6c displays the Pro-rated silviculture for the management planning terms discussed in the English River comparison and trends analysis. Note that the areas represented in Tables 6a, 6b and 6c are renewal areas for harvest depletions only, and do not include renewal for natural depletions. The values for area discussed below are annualized figures for all planned and actual renewal treatments for all TMP's and FMP's with the exception of the actual renewal treatments for the 2004 English River FMP.

The majority of renewal operations performed for the planning term covered by the combined 1994/1995 Brightsand and English River TMP's can be attributed to artificial renewal (seeding/planting). The total actual area of artificial renewal was 6,343.2 hectares, which represents 97.3 percent of the planned artificial renewal and 65.2 percent of the total planned renewal. A total of 215.6 hectares of natural renewal was completed for the combined 1994/1995 Brightsand and English River planning terms. The actual area of natural renewal represents 6.7 percent of the planned natural renewal and 2.2 percent of the total planned. The total site preparation completed during this term was 5,075.0 hectares of the planned 6,355.8 hectares. This represents an actual versus

planned site preparation program of 79.8 percent for the planning term. The mechanical site preparation program represents 97.9 percent of the total actual area of site preparation. The other 2.8 percent was represented by the chemical site preparation treatment. The total area of tending completed for this term was 4,720.6 hectares of the planned 5,107.0 hectares this represents a completed versus planned percentage of 92.4.

Of notable mention are renewal treatments which display a greater actual renewal area than planned. The renewal treatments which displayed this trend in the combined 1994/1995 Brightsand and English River TMP's were planting, shelter cone seeding, seeding with site preparation, slash pile burning, chemical ground cleaning, and pre-commercial thinning. The actual area of planting was 3,382.6 hectares which was 989.2 hectares above the planned renewal area. The shelter cone seeding, seeding with site preparation, slash pile burning and chemical ground cleaning programs all displayed a value of zero for the planned renewal area. However during this period the shelter cone seeding, seeding with site preparation, slash pile burning and chemical ground cleaning displayed an actual area of 31.0, 248.4, 38.2 and 529.8 hectares respectively. The manor in which slash pile burning was included in plans versus reported in annual reports changed during the term of the combined 1999/2000 Brightsand and English River FMP's. This accounts for the zero planned versus area reported for actual activity. The slash pile burning technique was employed to improve aesthetics and minimize landbase losses.

The total actual cleaning (ground and aerial) program for the combined 1994/1995 Brightsand and English River TMP's was 2,373.0 hectares with a total planned area of 4,207.0 hectares. This resulted in a total actual cleaning which was well below the planned area. The tending treatment pre-commercial thinning (PCT) was 1,447.6 hectares greater than the planned. The total planned area of pre-commercial thinning was 900.0 hectares with a total actual area of 2,347.6 hectares. Due to the increase in area requiring PCT the 1994-1999 Brightsand TMP received an amendment to account for the increase. The English River Forest did not receive an amendment for the PCT work performed; however, the work was still performed.

The combined 1999/2000 Brightsand and English River FMP's are discussed in the following. The percentage of area completed for the renewal program was 71.9 percent of the planned or 5,238.4 hectares of the 7,288.6 hectares. The artificial renewal program represented 74.4 percent or 5,421.4 hectares of the total planned renewal. The completed artificial renewal was 75.3 percent or 4,082.1 hectares of the planned. The planned natural renewal program was 1,867.2 hectares of which 1,156.3 hectares or 61.9 percent was completed. The total area of planned site preparation was 5,548.2 hectares of which 53.3 percent or 2,959.8 hectares was completed. The majority of the completed site preparation was attributed to the mechanical site preparation treatment with a total of 90.5 percent of the area being completed. The other 9.5 percent was attributed to the chemical site preparation treatment. The planned tending program for the combined 1999/2000 Brightsand and English River FMP's was 10,111.8 hectares of which 2,644.4 hectares or 26.2 percent was completed. The majority of the area for tending was attributed to herbicide (chemical aerial) applications. A total of 1,656.5 hectares of the

2,644.4 hectares was attributed to the aerial herbicide applications. Of notable mention is the supplemental renewal treatment displayed in Table 6a for the combined 1999/2000 Brightsand and English River FMP's. A total of 20.1 hectares was treated on average with supplemental tree planting. The supplemental renewal treatment is an additional treatment performed to enhance renewal when the original renewal treatment does not meet the desired results.

The combined 1999/2000 Brightsand and English River FMP's displayed two renewal treatments which were above the planned area. The two treatments were clear-cut natural and slash pile burning. The actual area of clear-cut natural renewal treatment was 1,094.4 hectares, which resulted in an excess area of 26.2 hectares. The actual area of slash pile burning was 3,040.3 hectares greater than the planned area. The larger actual versus planned was a result of changes in the reporting requirements for slash pile burning and the desire to improve aesthetics and reduce landbase losses.

The 2004 English River FMP even-aged renewal program was 8,197.4 which was 1,535.8 hectares below the planned even-aged renewal program for the combined 1999/1995 Brightsand and English River TMP's. The artificial renewal program for the 2004 English River FMP declined by 2,748.6 hectares when compared to the area of artificial renewal associated with the 1994/1995 Brightsand and English River TMP's. However the area associated with natural renewal increased by 1,212.8 when the 2004 English River FMP is compared to the combined 1994/1995 Brightsand and English River TMP's. The trend of an increase in the area associated with natural renewal and the decrease in area associated with artificial renewal also exists between the combined 1999/2000 Brightsand and English River FMP's and the 1994/1995 Brightsand and English River TMP's.

The trend which exists between area of actual natural and artificial renewal will most likely continue into the current (2004 English River) FMP. The 2004 English River FMP displayed a decrease in the area associated with planned artificial renewal when compared to the combined 1994/1995 Brightsand and English River TMP's. The increased use of natural ingress by the Company is reflected in the actual and planned areas of natural renewal. The increased use of this treatment can be attributed to the previous IFA recommendations and the requirement to meet the direction provided by SFMM (Strategic Forest Management Model) for the development of the 2004 FMP.

The direction provided by SFMM was to increase the representation of mixed conifer forest units on the English River Forest for the 2004 FMP. SFMM was directing the use of less intensive renewal treatments in order to create forest unit area that was more mixed conifer (i.e. MC1 and MC2) versus pure forest units such as SPU and PJ1. The maintenance of mixed conifer forest unit area is important to the sustainability of the English River Forest for both timber and wildlife.

Of notable mention are the actual values for plant, chemical aerial tending, and even-aged spacing (PCT) for the 2004 FMP. The values associated with the 2004 actual renewal areas are for the first year of the 2004 FMP. The recorded actual area of plant

was 4,430.3 hectares with the planned plant area being 1,647.8 hectares. This resulted in a larger actual area of plant for the 2004/2005 season than the average planned area for the 2004 English River FMP. The above average area of plant can be attributed to an above average planting program that occurred in the 2004/2005 season. However the area attributed to plant is expected to resume normal levels with the average planned area for the 2004 FMP being achieved over the 5 year term. The chemical aerial tending program and PCT treatments were over achieved due to backlog in the silviculture program. The actual area recorded for chemical aerial tending and PCT were 3,346.5 and 2,401.1 hectares, with a planned area of 2,600.0 and 1,000.0 hectares respectively. The areas associated with the chemical aerial tending, and PCT treatments should return to normal levels.

The data presented in Table 6b is a comparison of the extensive, basic and intensive renewal treatments as a percentage of the total renewal area for the management plans under discussion in the English River IFA comparison and trends analysis. The three planning terms were broken down into the planned and actual renewal. The natural renewal (Extensive) treatment refers to all natural renewal treatments performed on the Brightsand and English River Forests. The planned percentage of extensive renewal increased between the combined 1994/1995 Brightsand and English River TMP's and the 2004 English River FMP. The percentage planned natural renewal for the combined 1994/1995 Brightsand and English River TMP's was 33.0%, while the 2004 English River FMP was 54.0% of the total planned renewal. The general trend displayed in Table 6b is an increase in the planned extensive renewal. The under achievement of actual extensive renewal can be attributed to the reporting of natural renewal on both the Brightsand and English River Forests. The term covered by the 1994/1995 Brightsand and English River Report on Past Forest Operations (RPFO) discussed that the reporting of natural renewal was not accomplished until the area was declared FTG this generated a discrepancy between the values associated with the planned and actual natural renewal. The reporting and tracking of natural renewal has improved since the implementation of an extensive survey program in 1999 which addresses the problems associated with unreported areas of natural renewal.

The artificial renewal (Basic) treatment refers to all seeding (direct seeding, shelter cones, seeding with site preparation) and scarification for natural seeding. The combined 1994/1995 Brightsand and English River TMP's displayed that 42.4% of the planned renewal treatments were attributed to the basic treatment while the 2004 English River FMP displayed that only 25.9% of the planned renewal was associated with the basic renewal treatment. The artificial renewal (Intensive) treatment refers to all planting which has occurred on the Brightsand and English River Forests. The planned percentage of the intensive renewal treatment maintains a fairly consistent ratio between the combined 1994/1995 Brightsand and English River TMP's and the 2004 English River FMP. The general trend displayed in Table 6b for planned renewal is a decline in the percentage of planned basic renewal while the planned extensive renewal has increased which is a function of the previous IFA recommendations and as directed by SFMM.

2005 Independent Forest Audit
 Table 6a - Summary Report of Renewal, Tending, and Protection Operations
 English River Forest and Brightsand Forest
 Past and Current Plans

	Area Summary of all Forest Units (ha) (Figures are Annualized)					
	Past Plan Term		Past Plan Term		Current Plan Term	
	Planned	Actual	Planned	Actual	Planned	Actual
Renewal	1994-1999 BR 1995-2000 EN	1994-1999 BR 1995-2000 EN	1999-2004 BR 2000-2005 EN	1999-2004 BR* 2000-2005 EN**	2004-2009	2004-2009***
Regeneration						
Uneven-Aged Management						
Selection Cut - Harvest	0.0	0.0	0.0	0.0	0.0	0.0
Total Uneven-Aged Management	0.0	0.0	0.0	0.0	0.0	0.0
Even-Aged Management						
Natural Regeneration						
Natural Depletion	0.0	0.0	0.0	0.0	0.0	0.0
Clear-cut	1,226.8	181.8	1,068.2	1,094.4	3,526.4	454.0
Strip Cut	147.0	0.0	20.0	0.0	20.0	0.0
CLAAG (natural seeding)	0.0	0.0	523.0	16.6	883.2	0.0
Group seed tree cut	1,843.0	33.8	236.0	45.4	0.0	0.0
Clear-cut Natural Seeding	0.0	0.0	20.0	0.0	0.0	0.0
Subtotal Natural	3,216.8	215.6	1,867.2	1,156.3	4,429.6	454.0
Artificial Regeneration						
Planting	2,393.4	3,382.6	3,195.2	2,906.6	1,647.8	4,430.3
Seeding						
Direct	4,123.0	2,681.2	2,044.2	1,173.5	1,520.0	983.4
Shelter Cones	0.0	31.0	0.0	0.0	0.0	0.0
with Site Preparation	0.0	248.4	100.0	0.0	0.0	0.0
Scarification (with natural seeding)	0.0	0.0	82.0	0.0	600.0	0.0
Subtotal Artificial	6,516.4	6,343.2	5,421.4	4,082.1	3,767.8	5,413.7
Total Even-Aged Management	9,733.2	6,558.8	7,288.6	5,238.4	8,197.4	5,867.7
Total Regeneration	9,733.2	6,558.8	7,288.6	5,238.4	8,197.4	5,867.7
Site Preparation						
Mechanical	6,176.8	4,968.8	5,048.2	2,679.0	2,945.0	2,303.8
Chemical	179.0	106.2	400.0	280.9	1,163.4	419.9
Prescribed Burn	0.0	0.0	100.0	0.0	200.0	0.0
Slash Pile Burning	0.0	38.2	0.0	3,040.3	0.0	0.0
Total Site Preparation	6,355.8	5,075.0	5,548.2	2,959.8	4,308.4	2,723.6
Tending						
Cleaning						
manual	0.0	0.0	0.0	0.0	0.0	0.0
chemical - ground	0.0	529.8	156.0	96.0	700.0	0.0
- aerial	4,207.0	1,843.2	5,955.6	1,656.5	2,600.0	3,346.5
mechanical	0.0	0.0	0.0	0.0	0.0	0.0
prescribed burn	0.0	0.0	0.0	0.0	0.0	0.0
Spacing, pre-commercial thinning, improvement cutting						
even-aged	900.0	2,347.6	4,000.0	889.9	1,000.0	2,401.1
uneven-aged	0.0	0.0	0.0	0.0	0.0	0.0
Cultivation	0.0	0.0	0.0	0.0	0.0	0.0
Total Tending	5,107.0	4,720.6	10,111.8	2,644.4	4,300.0	5,747.6
Supplemental						
Artificial Regeneration						
Planting	0.0	0.0	0.0	20.1	0.0	0.0
Seeding Direct	0.0	0.0	0.0	0.0	0.0	0.0
with site preparation	0.0	0.0	0.0	0.0	0.0	0.0
Scarification	0.0	0.0	0.0	0.0	0.0	0.0
Total Supplemental	0.0	0.0	0.0	20.1	0.0	0.0

* Brightsand 99-04 is represented by 5 years of depletion information supplied from Annual Reports

** English River 00-05 is represented by 4 years of depletion information supplied from Annual Reports

*** Represents actuals for 2004-2005 period only

Source: Brightsand TMP 4.19 (1994-1999), FMP 25 (1999-2004), RPFO 7 (1994-1999), AR 6 (1999-2000, 2000-2001, 2001-2002, 2002-2003), English River TMP 4.19, FMP 25 (2000-2005, 2004-2009), RPFO 7 (1995-2000), AR 6 (2000-2001, 2001-2002, 2002-2003)

2005 Independent Forest Audit
 Table 6b - Summary Report of Renewal, Tending, and Protection Operations
 English River Forest and Brightsand Forest
 Past and Current Plans

Renewal Treatment	Past Plan Term		Past Plan Term		Current Plan Term	
	Planned	Actual	Planned	Actual	Planned	Actual
	1994-1999 BR 1995-2000 EN	1994-1999 BR 1995-2000 EN	1999-2004 BR 2000-2005 EN	1999-2004 BR* 2000-2005 EN**	2004-2009	2004-2009 ***
Natural Renewal (Extensive)	33.0%	3.3%	25.6%	22.1%	54.0%	7.7%
Artificial Renewal (Basic)	42.4%	45.1%	30.5%	22.4%	25.9%	16.8%
Artificial Renewal (Intensive)	24.6%	51.6%	43.8%	55.5%	20.1%	75.5%
Total Renewal Program	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

* Represents data for Brightsand Forest from the AR's for the first 4 years of the FMP, data not compiled for the last year of plan

** Represents data for English River Forest from the AR's for the first 3 years of the FMP, data not compiled for the last year of plan

*** Data not available for harvest for the first year of the current English River FMP

Source: Brightsand TMP 4.19 (1994-1999), FMP 25 (1999-2004), RPFO 7 (1994-1999), AR 6 (1999-2000, 2000-2001, 2001-2002, 2002-2003), English River TMP 4.19, FMP 25 (2000-2005, 2004-2009), RPFO 7 (1995-2000), AR 6 (2000-2001, 2001-2002, 2002-2003)

The total area of regeneration recorded for the combined 1994/1995 Brightsand and English River TMP's and the combined 1999/2000 Brightsand and English River FMP's was 57,421.1 hectares. The total area of harvest during the same time frame was 61,828.2 hectares. The total harvest area with a renewal treatment applied to it was 92.9 percent. The reduced renewal area can be attributed to the reporting of naturals, silvicultural lag, and areas associated with road right-of-ways. The reporting of natural renewal areas experienced lag between the time of prescription (pre-harvest or post harvest forest operation prescriptions) and FTG surveys which determine the success of the regeneration treatment. The difference in area created by the time between harvest and renewal is known as "silvicultural lag". Prior to the combined 1994/1995 Brightsand and English River TMP's the area harvested per year was lower than the current harvest levels. Areas harvested during the last year of the 1989/1990 Brightsand and English River TMP's were not renewed at the completion of the TMP's due to time of harvest. The renewal areas for the final year of the TMP's would appear in the following annual reports. The final year of the 1989/1990 Brightsand and English River TMP's will then also appear in the 1994-1999, and 1995-2000 RPFO (Report on Past Forest Operations) which is part of this comparison and trend analysis. The difference in harvested area between the current harvest area and the 1989/1990 harvest area would generate a discrepancy between the area renewed and area harvested. The construction of road right-of-ways generates area related to harvest while removing this area from renewal activities. The areas cannot be renewed due to the construction of the road. The construction of road right-of-ways creates area discrepancies between the harvest and

renewal. The area discrepancies are minor when compared to the area attributed to the silvicultural lag.

The TMP and FMP planned renewal figures are based on the accomplishment of full AHA harvest. Therefore planned figures will likely not be achieved if full AHA was not achieved. In order to better represent renewal accomplishments Table 6c has been developed. In Table 6c the levels of renewal activity have been pro-rated by the percentage of AHA accomplished. Section D of Table 6c demonstrates the pro-rated percent accomplished.

The combined 1994/1995 Brightsand and English River TMP's displayed a total actual natural renewal treatment area of 215.6 hectares with a pro-rated planned natural renewal area of 2,857.7 hectares. The planned natural renewal treatments for the combined 1994/1995 Brightsand and English River forests were clear-cut, strip cut and group seed tree renewal. The renewal treatments performed during this time period however were the clear-cut and GST renewal treatments with 181.8 and 33.8 hectares performed respectively. The planned pro-rated artificial renewal treatment for the combined 1994/1995 Brightsand English River TMP's was 5,788.9 hectares. The 5,788.9 hectares of pro-rated planned artificial regeneration was comprised of 2,126.2 hectares of planting and 3,662.7 hectares of direct seeding. The total artificial regeneration performed was 6,343.2 hectares resulting in 109.6 percent of the pro-rated planned artificial renewal being performed. The actual artificial renewal area was a combination of 3,382.6 hectares of planting, 2,681.2 hectares of direct seeding, 31.0 hectares of shelter cone seeding, and 248.4 hectares of seeding with site preparation.

The actual natural and artificial renewal treatments for the combined 1999/2000 Brightsand and English River FMP's fell short of the pro-rated planned renewal treatment. The area of actual natural renewal was 1,156.3 hectares with strip cut, CLAAG (Careful Logging Around Advanced Growth) and clear-cut with natural seeding all falling short of the planned renewal area. The actual natural clear-cut renewal treatment was 124.7 percent when compared to the pro-rated planned clear-cut renewal. The total artificial renewal treatment completed was 93.1 percent of the pro-rated planned artificial renewal. All artificial renewal treatments fell short of their planned renewal treatments with the exception of the planting treatment which displayed an excess of 284.2 hectares or 110.8 percent of the pro-rated planned area performed. The direct seeding fell short by 505.5 hectares while the seeding with site preparation fell short by 82.1 hectares resulting in 69.9 and zero percent of the pro-rated planned areas being performed.

The general trend displayed in Table 6c was an increase in the area associated with the natural renewal treatment when the combined 1994/1995 Brightsand and English River TMP's are compared to the combined 1999-2000 Brightsand and English River FMP's. The area associated with the artificial renewal treatment displayed a reduction in area between the combined 1994/1995 Brightsand and English River TMP's and the combined 1999/2000 Brightsand and English River FMP's.

2005 Independent Forest Audit
Table 6c - Pro-rated Silviculture
English River Forest and Brightsand Forest
Past and Current Plans

	1994-1999 BR 1995-2000 EN	1999-2004 BR* 2000-2005 EN**
Section A - Planned & Actual Harvest		
Planned Harvest (ha)	8639.60	7770.82
Actual Harvest (ha)	7675.04	6382.54
% Area Harvested	88.84%	82.13%
Section B - Silviculture (Pro-rated Planned)		
Natural Renewal		
Clear-cut	1,099.8	877.4
Strip Cut	130.6	16.4
CLAAG (natural seeding)	0.0	429.6
Group seed tree cut	1,637.2	193.8
Clear-cut Natural Seeding	0.0	16.4
Total Natural Renewal	2,857.7	1,533.6
Artificial Renewal		
Planting	2,126.2	2,624.4
Seeding Direct	3,662.7	1,679.0
Shelter Cones	0.0	0.0
with Site Preparation	0.0	82.1
Total Artificial Renewal	5,788.9	4,385.5
Section C - Silviculture (Actual)		
Natural Renewal		
Clear-cut	181.8	1,094.4
Strip Cut	0.0	0.0
CLAAG (natural seeding)	0.0	16.6
Group seed tree cut	33.8	45.4
Clear-cut Natural Seeding	0.0	0.0
Total Natural Renewal	215.6	1,156.3
Artificial Renewal		
Planting	3,382.6	2,908.6
Seeding Direct	2,681.2	1,173.5
Shelter Cones	31.0	0.0
with Site Preparation	246.4	0.0
Total Artificial Renewal	6,343.2	4,082.1
Section D - Percent of Pro-rated Silviculture Accomplished		
Natural Renewal		
Clear-cut	16.7	124.7
Strip Cut	0.0	0.0
CLAAG (natural seeding)	0.0	3.9
Group seed tree cut	2.1	23.4
Clear-cut Natural Seeding	0.0	0.0
Total Natural Renewal	7.5	75.4
Artificial Renewal		
Planting	159.1	110.8
Seeding Direct	73.2	69.9
Shelter Cones	0.0	0.0
with Site Preparation	0.0	0.0
Total Artificial Renewal	109.6	93.1

* Brightsand 99-04 is represented by 5 years of depletion information supplied from Annual Reports

** English River 00-05 is represented by 4 years of depletion information supplied from Annual Reports

Source: Table 6a - English River IFA Comparison and Trends Analysis Summary Report of Renewal, Tending, and Protection Operations

Harvest Area Successfully Regenerated – Summary of all Forest Units

The harvest area successfully regenerated is displayed in Table 7 and Figure 5 and discussed in the following. Table 7 and Figure 5 were populated through the use of FTG (free-to-grow) information provided for the English River and Brightsand Forests for all years including the 1994 FTG areas. The total harvested area was 38,812.0 hectares while the total area declared successfully regenerated was 34,372.0 hectares. The total area successfully regenerated when compared to the area-harvested resulted in a successful regeneration rate of 93.9 percent. The total area surveyed for FTG was 36,619.0 hectares while the total unsurveyed area was 2,194.0 hectares. The total surveyed area was 94.3 percent of the total harvest area. The area NSR (not-satisfactorily regenerated) refers to areas that require more time to reach FTG or additional efforts are required to achieve success for example fill-in planting or tending. The area of NSR was 2,054.0 hectares with the area not available for regeneration (e.g. Roads and landings) being 193.0 hectares.

No major species changes are occurring on the English River Forest license as a result of forest management practices. The silviculture practices employed during the 1989-1994 period appear to have been successful at regenerating depleted areas to desired species.

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**Table 7 - Harvested Area Successfully Regenerated -
Summary of All Forest Units
Brightsand Forest and English River Forest
Past and Current Plans**

	AREA IN HECTARES (All Forest Units Combined) Even-aged Management (1989-1994)
Total Area Harvested	38,812.0
Total Area Surveyed for Regeneration Success	36,619.0
Total Unsurveyed Area	2,194.0
Total Area Declared Successfully Regenerated	34,372.0
Total Area Surveyed Not Successfully Regenerated (NSR)	2,054.0
B&S	
Not Available for Regeneration (eg. Roads & landings)	193.0
Other	
Percent of Area Surveyed Declared Successfully Regenerated	93.9

Source: Computed from GIS records and queries of depletions from 1989-1994 and the results of free-to-grow surveys.

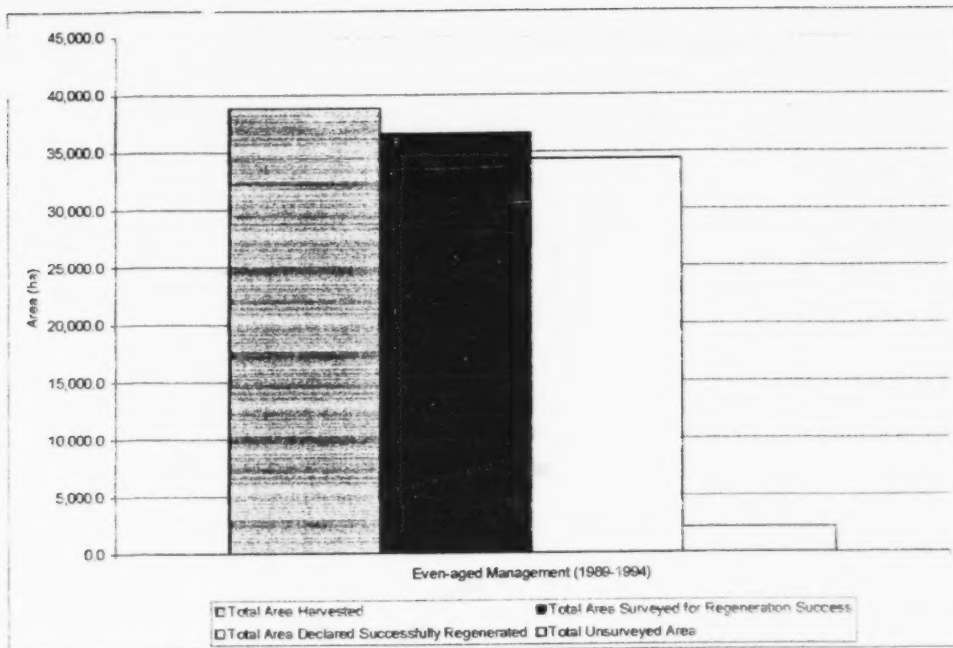


Figure 5. Harvested area successfully regenerated in hectares

Source: Computed from GIS records and queries of depletions from 1989-1994 and the results of free-to-grow surveys

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Appendix B: Audit Team Members and Qualifications

The IFAPP identified the following qualifications for Audit Teams:

Lead Auditor:

- must have a minimum of 7 years recent and relevant experience in forest management and forest operations, in similar types of forests, preferably in Ontario;
- must be trained in auditing procedures and have current forest auditing experience; and
- ideally is certified as an environmental auditor.

Audit Team:

- minimum of two people with experience in forest management planning and forest operations;
- a minimum of one wildlife biologist and/or ecologist;
- minimum of one person with experience in assessing: socioeconomic profiles and the social and economic impacts which may result from forest management planning decisions; public consultation processes in the context of forest management; and First Nations involvement in forest management planning;
- for each individual, minimum of 7 years recent and relevant experience in forest management and forest operations in similar forest types, preferably in Ontario;
- ideally, some Audit Team members will be certified as environmental auditors;
- at least one member of the Audit Team must have demonstrated experience and/or training in the requirements of the FMPM including the strategic direction and determination of sustainability component;
- at least one member of the Audit team shall be a Registered Professional Forester; and
- team size is a minimum of three.

The team for this audit, described in Table B - 1 below, included five people in the following positions: Lead Auditor and Harvesting and Modeling Forester, Wildlife and Roads Expert, Silviculturalist, Planning Auditor, and Consultation Auditor.

Table B - 1. The Roles, Responsibilities, and Qualifications of the Audit Team

Name/Company	Role	Responsibilities	Credentials
Mr. Chris Wedeles ArborVitae Environmental Services Ltd.	Lead Auditor, Wildlife and Roads Expert	• overall audit coordination; • oversee activities of other team members; • liaise with Company and MNR; • review and inspect Areas of Concern Documentation and Practices; • review and inspect aspects of forest management related to environmental practices and wildlife management integration; • review and inspect access and water crossings.	B.Sc., M.Sc. (Wildlife Biology); 18 years wildlife and forest ecology and experience in Ontario; completed over 20 previous forest audits; certified as an auditor by the Quality Management Institute.
Dr. Jeremy Williams, RPF ArborVitae Environmental Services Ltd.	Harvesting and Modeling Forester	• review and inspect forest harvesting records and practices; • review aspects of forest management related to forest economics and social impacts • reviews FMP modeling inputs and activities	B.Sc.F., Ph.D. (Forest Economics); 14 years consulting experience in Ontario related to forest management, planning, wood supply modeling, and forest economics; participated in 11 previous auditing assignments; certified as an auditor by the Quality Management Institute.
Mr. Rob Arnup, Rob Arnup Consulting	Silviculturist	• review and inspect silvicultural practices and related documentation; • review and inspects selected environmental aspects of forest management	B.Sc. Hons. (Biology). Twenty-two years experience in forest management in Ontario; author or co-author of several silvicultural guides and operational manuals; participated in five previous auditing assignments.
Mr. Mark Fleming, R.P.F. Fleming Forestry	Planning Auditor	• review FMP and related documents to ensure compliance with FMPM and TPM and other regulations	Hon. B.Sc.F., R.P.F. 20 years experience in forest management in Ontario as a consultant, working as a regional OMNR planning specialist, and operations forester with industry; Trained lead auditor for ISO 14001 and Smartwood/FSC.
Dr. David Euler	Consultation Auditor	• review documentation related to forest management consultation processes • Consult with stakeholders, LCC, and First Nations regarding forest management issues	Ph.D. Ecology. Retired Dean of Forestry, Lakehead University, former Wildlife Ecologist with MNR, member Provincial Forest Technical Committee.

Appendix C: Independent Forest Audit Guiding Principles

The IFAPP identifies several components of the audit process. The audit protocol constitutes the main framework for the audit. There are eight principles within the audit protocol (Table C - 1). Each principle contains a series of criteria which, if met, will result in the principle being achieved. For each criterion, a number of procedures are used to assess the auditees compliance and effectiveness.

Table C - 1. The Eight Principles Underlying the Audit Protocol, as noted in the IFAPP.

1. Commitment

Commitment is reflected in vision, mission and policy statements of the Company. Vision and mission statements are intended to provide long-term guidance for the organization. Policy statements reflect how the organization's vision and mission will be achieved. These statements must be reflected in the day-to-day operations of the organization.

2. Public Participation

The process of sustainable forest planning, implementation and monitoring is conducted in an open consultative fashion, with input from all members of the planning team, Local Citizens Committee, native groups, and other parties with an interest in the operations of the forest unit.

3. Forest Management Planning

The forest management planning process involves the input of a number of individuals and groups to describe the current condition of the forest, the values and benefits to be obtained from the forest, the desired condition of the forest in the future, and the best methods to achieve that goal. Certain minimum standards and procedures have been established upon which all management units are evaluated.

4. Plan Implementation

Verification of the actual results of operations in the field compared to the planned operations is required to be able to assess achievement of the plan objectives and compliance with laws and regulations. In conjunction with the review of operations, the reporting tables are tested to ensure accurate results are reported.

5. System Support

System support concerns resources and activities needed to support plan implementation so as to achieve the desired objectives. Appropriate control, documentation and reporting procedures must be in place and operational. Planned action should occur at planned times, in planned places and to the planned degree.

6. Monitoring

The activities and the effects of these activities in achieving management objectives must be regularly measured and assessed. In particular, the indicators of achievement must be assessed and their effectiveness reviewed.

7. Achievement of the Management Objectives and Forest Sustainability

Periodic assessments of the management of the forest unit operations and the forest unit must be made in order to determine whether forest sustainability and other management objectives are being achieved. This includes comparing the actual values of the predetermined indicators against the planned values and assessing the reasons for any significant deviations.

8. Contractual Compliance

The licence must comply with the specific requirements of the SFL.

Appendix D: List of Acronyms

AOC	Area of Concern
AHA	Available Harvest Area
AR	Annual Report
AWS	Annual Work Schedule
BFP	Buchanan Forest Products Inc.
B.Sc.F	Bachelor of Science in Forestry
CFSA	Crown Forest Sustainability Act
CLAAG	Careful Logging Around Advance Growth
Class EA	Class Environmental Assessment for Timber Management on Crown Lands in Ontario
COSEWIC	Committee on the Status of Endangered Species in Canada
DFCC	Desired Future Forest Condition
DM	District Manager
EBR	Environmental Bill of Rights
EMS	Environmental Management System
FIM	Forest Information Manual
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual
FOIP	Forest Operations Inspections Program
FOIR	Forest Operations Inspection Report
FOP	Forest Operations Prescription
FRI	Forest Resource Inventory
FRT	Forest Renewal Trust
FRWI	Forest Roads and Watercrossings Initiative
FTG	Free-to-Grow
GIS	Geographic Information System
GPS	Global Positioning System
ha	Hectares
km	kilometres
IFA	Independent Forest Audit
IFAPP	Independent Forest Audit Process and Protocol
ISO	International Standards Organization
LCAC	Local Citizens Advisory Committee
LCC	Local Citizens Committee
m³	cubic meters
MAI	Mean Annual Increment
MC1	Mixed Conifer 1 Forest Unit
MNR	Ontario Ministry of Natural Resources
MOEE	Ministry of the Environment and Energy
NDPEG	Natural Disturbance Pattern Emulation Guide
NRVIS	Natural Resource Values Information System
NSR	Not Satisfactorily Regenerated
OBM	Ontario Base Map
OFA	Ontario Forest Accord
ONG	Ojibway Nation of Saugeen
OL	Overlapping Licence or Overlapping Licensee
OPSEU	Ontario Public Service Employee's Union
PO1	Poplar 1 Forest Unit

RPF	Registered Professional Forester
RPFO	Report of Past Forest Operations
RSA	Resource Stewardship Agreement
SGR	Silvicultural Ground Rule
SEIM	Socio-Economic Impact Model
SFI	Sustainable Forestry Initiative
SFL	Sustainable Forest Licence
SFM	Sustainable Forest Management
SFMM	Strategic Forest Management Model
SGR	Silvicultural Ground Rules
SMA	Selected Management Alternative
SOP	Standard Operating Procedure
TOR	Terms of Reference
WI	Work Instruction
WLON	Wabigoon Lake Ojibway Nation
WTS	Woodlands – The System

Appendix E Summary of Input to the Audit Process

General Public/Other Stakeholders

Two approaches (in addition to meeting with the LCC and interviewing its members) were used to encourage the public to provide input into the audit: 1) a sample of approximately 400 individuals/organizations on the MNR's FMP mailing list were sent a brief questionnaire asking for input on the management of the forest; and 2) Advertisements were placed in regional newspapers soliciting input.

In response to these attempts we received 14 responses. For those comments which were tractable, and inside the scope of the audit, the audit team pursued and resolved them with representatives of the Company and/or MNR. Several of the responses identified more than one concern. In approximate order of the frequency with which they were expressed, following is a list of issues identified in returned questionnaires and accompanying letters:

- Concern over rehabilitation of Savoy Lake Cottagers Road
- Discontent with the use of herbicides in forest management
- Satisfaction with companies efforts to deal with cottagers concerns
- Discontent with the practice of clearcutting
- Concern over skyline/vista management;
- Concern regarding overfishing of some waterbodies as a result of access inadvertently created by logging roads;
- Concern regarding lack of sufficient opportunities for public input
- Concern regarding small size of trees being harvested
- Concern regarding wood that may be merchantable being left in the bush
- Concern over lack of thinning of overstocked young stands

Local Citizens' Committee

During the course of the audit, 3 of the 4 current members of the LCC were interviewed. Basically all 3 were supportive of the work of the LCC and indicated general satisfaction with the Ministry and the help that the Ministry provided to the Committee. Some differences noted were associated with dealing with a local bridge removal problem and the difficulty of solving some problems associated with access. However, the LCC members had a broad perspective and recognized that compromises were necessary to achieve a sustainable plan.

Two members of the former Brightsand LCC were interviewed. One had chosen to join the new English River LCC, one had not. Other members of the former Brightsand LCC were not available for interviews. The views and perspectives of both people were considered and form part of the background in the Audit. Both LCC members believed that the former Brightsand LCC functioned poorly, and they reported general dissatisfaction with the results of that work. In contrast, the member who joined the English River LCC from the former Brightsand LCC reported that the current LCC and its Chair was effective and maintained a professional and spirited atmosphere.

Native Communities

Three Aboriginal communities have an interest in the English River Forest and leaders from all 3 were interviewed. The forest representative from the Wabigoon Lake Ojibway Nation was involved in substantial and numerous discussions with the Ministry and was vigorously involved in negotiating First Nations issues. He was dissatisfied with the benefits that the Ministry was able to provide to his First Nation, and believed that more benefits should be possible. The Band Manager from the Lac des Mille Lac First Nation provided a comprehensive picture of the concerns of his Band and indicated how the Band will be participating in the next round of management planning. He was positive about the relationship with his Band and MNR, and felt that the interaction was excellent and would improve in future. The Chief of the Ojibway Nation of the Saugeen was interviewed and the concerns he expressed were noted and are included in the report. He was not satisfied with the benefits provide to his community and basically did not want to participate in forest management planning.

Two senior members of the Ministry (District Manager and Area Supervisor) involved in the Forest Management Plan were interviewed regarding First Nations' role and integration into forest management planning. Both managers provided comprehensive and thoughtful accounts of the issues in working with the First Nations and the subject of those discussions are part of the report. Relationships between the Lac des Mille Lac First Nation and MNR were positive, however, interactions with the Saugeen were not positive, and while the Wabigoon Representative was not satisfied, there was an energetic period of consultation and discussion on the topics of interest.

SFL Holder

Numerous discussions were held with staff of Bowater prior to, during, and following the site visit week. Topics raised by Bowater staff include:

- The need to balance ecological and economic objectives for the forest;
- The functionality of the 2004 Planning Team;
- Bowater's restructuring to improve forest management planning
- Intransigence of MNR regarding ecological objectives;
- Need for improved communication between MNR and Company;
- The development of a joint MNR/Company plan to deal with planning issues;
- Lack of support by regional MNR for district staff;
- Development and use of Company EMS;
- Efforts to develop a roads inventory;
- Lack of capacity of MNR to conduct independent modelling during preparation;
- Difficulties associated with meeting shifting MNR requests during the preparation of the contingency plan;
- Role of the OPSEU Strike in contributing to planning delays/difficulties;
- Reasonableness of MNR requests regarding the planning inventory;
- Concern over the placement of marten core areas;
- Efficacy of cut-to-shore operations;
- Implementation of snag retention measures and NDPEG requirements;
- Success of chipper pile management and
- Desire to use spatial modelling to assist in managing the forest.

Other topics related to the above were also discussed with the Company throughout the audit process

Ministry of Natural Resources

Discussions with District, Regional, and Forest Management Branch MNR staff included the following topics:

- The functionality of the planning team for the 2004 FMP;
- Dissatisfaction with the manner in which the simulation modelling was conducted;
- Yield curves and wood supply projections in the 2004 FMP;
- The need to balance ecological and economic objectives for the forest;
- Need for improved communication between MNR and Company;
- Intransigence of the Company regarding economic objectives;
- Company response to required alterations;
- Caribou and marten management;
- Projected declines in wildlife habitat
- Success of Company efforts at slash pile management;
- Quality of Company Annual Reports and Annual Work Schedule submissions;
- Access management on the forest; and
- Succession rules used in forest modelling.

